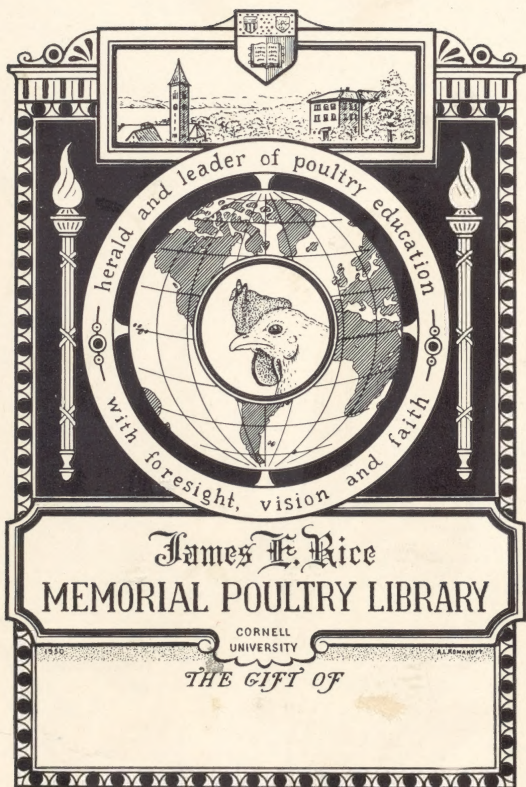


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All About Plymouth Rocks



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All About Plymouth Rocks



77

Edited by
O. R. ERNST

*Compliments
O. R. Ernst.*

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THIS BOOK is dedicated to that great army of beginners in the breeding of Plymouth Rocks who are always eager to learn more about their chosen favorites and to those good poultry men and women who have decided to start the breeding of thoroughbred poultry, but who are undecided what breed to select. It contains a wealth of accurate and reliable information on judging, mating, breeding, exhibiting, etc., of Plymouth Rocks, given by the best authorities and most successful breeders, as well as an abundance of information on the general care of poultry at all ages.

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Plymouth Rock—An American Institution

By THOS. F. RIGG, Fort Wayne, Ind.

THE Plymouth Rock fowl is an American institution. Originating in that section where the standard-bearers of liberty first touched the shores of their new home, sentiment and tradition combine to give this fowl first place in the hearts of the American people. It is the favorite fowl on the farms of the United States and has yielded unto the farmers and commercial poultry producers a greater financial return than any other breed of fowls.

The Plymouth Rock fowl is a combination of beauty and usefulness. In the showroom they hold a very prominent place and command the greatest attention. Since the admission of the Barred Plymouth Rock to the American Standard of Perfection in 1874 extra choice specimens of this breed have brought a higher price than any other exhibition fowl. I predict that this condition will always exist and that the Barred Plymouth Rock will always remain the premier fowl of America.

It is as a profitable fowl to the farmer and the cottager that the Plymouth Rock has held its exalted place during the past fifty years. There are now seven varieties of this breed recognized by the American Poultry Association and given place in the Standard of Perfection. In all these varieties the Plymouth Rock body type is the same, the color pattern being pleasing to the eyes of the fancier.

The body type makes this fowl a market fowl of great excellence. As broilers they demand the highest market price. They mature early and carry the meat well distributed over the body. The public calls for this fowl and will have it.

The Plymouth Rock is a good and profitable egg producer. In a word, the Plymouth Rock is the utility fowl par excellence.

Standing as it does first in the hearts of the American people, the Plymouth Rock is entitled to be represented by a journal devoted exclusively to the breed. I was so glad when I learned that the Poultry Breeders Publishing Company had decided to establish a publication devoted exclusively to the Plymouth Rock fowl. Messrs. O. R. Ernst and A. G. Studier have made a signal success of the Rhode Island Red Journal and The Leghorn World, and have given the fowls which these publications represent, and the men and women who breed them, great service. Not only have these publications rendered this service but they have been of aid to the poultry industry of the country as a whole.

I know beyond all doubt that these gentlemen will serve faithfully and well the Plymouth Rock fowl, the breeders and fanciers thereof, and the industry in its entirety, in the Plymouth Rock Monthly.

I want to here ask all breeders of Plymouth Rocks in America to give Messrs. Ernst and Studier their united support. They are fully entitled to this, and self-interest, if nothing else, should induce the breeders and fanciers to thus support the journal devoted exclusively to their favorite fowl.

I hope the publishers will allow me to be of some service in this connection.

The Plymouth Rocks

By PROF. H. R. LEWIS, Davisville, R. I.

WE YANKEES are extremely proud of anything which we ourselves have originated. So it is no wonder then that the American poultryman is extremely proud of the Plymouth Rock, a breed made in America, by Americans for Americans, and dedicated to our historic Plymouth Rock, the birthplace of American liberty. A little over three hundred years ago, the Pilgrim fathers landed at Plymouth, bent upon establishing an English colony in America, which should be devoted to liberty-loving people. It was further especially fitting that one of our earliest American-made breeds should be named for the landing place of these early Pilgrims. As early as 1847, a group of New England fanciers conceived and developed the first bird showing resemblance to our present day Rock. It was not until a number of years later, however, that after careful breeding and mating, the present beautiful specimens were realized.

The Plymouth Rock Shape Makes Them the Most Useful Breed

The Plymouth Rocks are typical dual-purpose or general-purpose fowls, and are so recognized and bred. They have good size and a frame to carry large amounts of body flesh. They have proven themselves excellent producers of market eggs. These two developments have been made possible due to the foresight of the early breeders in seeing that the Plymouth Rocks were bred to a type capable of carrying a fair amount of flesh, yet at the same time not antagonistic to egg production. The demand of the American housewife was the real force that shaped the destinies of the Plymouth Rocks. She wanted a medium-sized bird, well fleshed, capable of substantial egg production, and above all else, a clean-shanked bird with yellow shanks, skin and beak. The Rocks are medium to large in size, the hens weighing seven pounds and the cocks nine and one-half pounds. In shape they are moderately long and deep, having somewhat the appearance when viewed from the side of an inverted derby hat. This means that they have a full breast, with moderately full fluff and well developed abdomen, which are two qualities which go to make an egg producer. They have a long keel and a long, broad back, sloping slightly, with a concave sweep of saddle to the tail. The rear of the back and neck are well covered with full flowing saddle and hackle feathers. The Plymouth Rock type is one of the most beautiful and useful of any breed of fowls today.

The Plymouth Rocks Are a Farmers' Bird

Ever since I stood knee-high to a grasshopper, when as a youngster years ago I used to spend my vacation time on the old Rhode Island farm, I have had great faith in what my grandfather called the "old grey hens." It is by this name that the Barred Rocks have been widely known through the length and breadth of our typical farming communities. Especially in the corn belt states has the Plymouth Rock found a deserving home. Some of the reasons for such popularity on the farm are their broody traits. They make the finest of mothers to hatch and rear the young where incubators are never thought of. They are gentle in disposition, bear confinement easily, fair foragers, searching out much of their living from the waste products of the farm when given the ability to range over the fields and through the barnyards. They are especially hardy, not easily injured from cold, and are remarkably free from disease. They mature fairly early, considering their size, and when properly handled make good winter layers when the price of eggs is normally high. This breed is especially popular with

the poultry buyers in the middle western farming country due to their weight and fine quality of flesh. A large buyer in Indiana once said to me, "Give me a Plymouth Rock every time, for then I have a medium weight carcass which the consumer wants, and this is covered with meat in every part."

Popular from coast to coast on farms, in suburban communities and in the fancier's flock, popular in large flocks and small flocks on egg farms, breeding farms, and market meat farms, the Plymouth Rocks have come down through the decades since their origin, winning increased favor and popularity as they came. All credit to them, for they are the dual-purpose chicken, through the qualities which they possess, and will please the eye and the palate of the most fastidious connoisseur of chickens.



The Plymouth Rock As a Market Fowl

By GLENN PALMER, Yorkville, Ill.

WHEN I think of the Plymouth Rock as a market fowl, the first thing that comes to my mind is the fact related by a neighbor of mine relative to the success he had when attempting to market a surplus of Mediterranean class of fowl. He was told at the product plant that it would be necessary for him to take considerably less per pound for his fowls on account of the fact that they were such a poor bird for table use.

We are asked what constitutes our idea of a good market fowl. The average Mediterranean breeder advertises the high egg record this particular strain produces, but due to the fact of the difference in price brought from their birds for meat production, they do not mention other features, which to our mind is of equal importance. Our idea of market fowl is not a bird that will produce a high egg yield, a two-pound broiler, or a twelve-pound capon, but a fowl that combines all these good features, which it is generally agreed can be found in the Plymouth Rock. It is interesting to know that in looking over the records of the various egg contests, we find in many instances the Plymouth Rock has either led the contest or has been very close to the general average for all breeds of birds.

Another point of interest noted in the various varieties of fowl found on the average American farm, while traveling through the middle states, and in fact many of the eastern sections, is that there are more Plymouth Rocks of pure breed or high grade than of all other breeds combined. The American farmer as a general rule does not bother with fads or fancies nor breeds of poultry that do not pay a reasonable profit, and as he is the man who has tried out the majority of different varieties and has tested them from the dollars-and-cents standpoint, he knows which variety pays the best profit. That is why he has selected the Plymouth Rock breed as a standard variety of poultry.

However, from the market standpoint alone, we must leave it to the packer to decide which in his opinion may be considered the ideal bird for market use. Last winter while visiting the Chicago National Show, a number of us were taken through the Armour Packing Company plant. While we were in their poultry product department they brought out several cases of dressed poultry to show us their methods of packing and their ideals of the market fowl. These dressed birds still had a few feathers on the ends of their wings, and with hardly an exception the birds shown us as ideal market fowls were of the Barred Plymouth Rock breed.

Barred Plymouth Rocks

By FRANK L. PLATT, Chicago, Ill.

THE first fowls to bear the name of "Plymouth Rocks" were originated by Dr. John C. Bennett of Plymouth, Mass., about the year 1849. This new breed carried the blood of Asiatic breeds, the old English Dorking, and the Game. It was reputed to mature somewhat earlier than the big Asiatics, and to be a somewhat superior layer. The cross at last became extinct.

The early ancestors of our modern Plymouth Rocks were first brought to the public attention at the Worcester, Mass., show, held in March, 1869, when D. A. Upham of Wiltonville, Conn., exhibited a trio of fowls that were in color bluish-gray, crossed by darker bars. Upham had secured in the fall of 1866 a trio of birds from a Connecticut farmer by the name of Spaulding, who grew poultry for market purposes and had in his flock some Dominique-colored specimens. Spaulding had produced this stock by crossing a Dominique-colored male on Black Cochin (then called Black Java) hens. He had bred the cross only one year when Upham, learning of it, went to see the birds and made his original purchase of a trio. He then brought the new variety to the attention of the interested public at the exhibition of the New England Poultry Club at Worcester in 1869. As a result of that initial exhibition of stock, Upham took orders for a hundred sittings of eggs at \$2.00 per sitting.

The Chinese Influence

This brief history of the breed's origin at once shows the influence of the Asiatic blood that had come to America. The early Plymouth Rock was the offspring of the large Asiatic stock and the earlier colonial stock which had been brought to the shores of America from England and western Europe.

A great boom in "Shanghai's" followed the introduction of the Asiatics, but there was soon a reaction from the single quality of size, and all sorts of efforts were directed toward making an intermediate type. The Plymouth Rock was the first permanent successful effort. It has since been followed by the Wyandotte and Rhode Island Red in America, the Orpington and Sussex in England, the Malines in Belgium, the Faverolles in France, the Barnevelders in Holland, etc.

The Plymouth Rock is intermediate between the huge Asiatic and the small, active races. The large Asiatics had failed to fill the bill as a dual-purpose fowl; they failed as foragers for lack of activity, while the old dung-hill of English or European ancestry was too small.

We should bear this early history in mind, remembering that the Plymouth Rock is a medium type. The word "medium" well applies to this breed. "When asked what kind of comb it should have, it is well to answer "medium" in size; when asked what length of back it should have, it is safe to answer "medium"; or when interrogated as to the height of tail carriage, it is approximately correct to answer "medium" high. Its length of legs should be medium—not long, not short. The Rhode Island Red may be described as "long" in some sections, or the Wyandotte as "short," but between all extremes the true Plymouth Rock is "medium."

Extremes Are Dangerous

Unfortunately all breeders have not kept to the middle of the road on a median line. They have at times not only tolerated but sought

extremes. Some have wanted simply big birds. Size is always secured by breeding slower maturity. One defect of some strains of Plymouth Rocks today is slow maturity, the pullets requiring eight or nine months to mature and begin laying eggs. That is an economic disadvantage, when compared to a pullet that matures in six months.

Slow maturity is correlated with slow feathering. The early Plymouth Rock feathered rapidly. Nakedness was not a characteristic of the chicks. It is today a defect in some families, but not necessarily so, for early-feathering, early-maturing Plymouth Rock chickens are being bred by many practical-minded breeders.

The slow feathering began to be a noticeable trait in some strains as the breeders of those strains began to produce very narrow-barred birds. Forgetting the characteristic which can be summed up in the words "medium width of barring," they sought to produce very narrow barring. Birds that have such feather markings frequently have narrow feathers that are slow to grow out in chickhood.

Mating This Variety

There is a natural tendency in the Barred Plymouth Rock variety for the males to come lighter in color than the females. Some attribute this to the black females used in the original cross. That supposition cannot stand in the light of modern scientific knowledge.

A study of the hereditary factors shows that the light bar is what makes the Plymouth Rock a barred chicken. Otherwise it would be a black chicken. Now a cockerel of this variety inherits light bars from both sire and dam. In other words, the cockerel inherits a double dose of barring. On the other hand, a pullet inherits barring from its sire. Accordingly the cockerel is more barred than his sister, the pullet, and is therefore lighter in color.

The exhibition Standard says that the cockerel and pullet must match, that is, be of the same shade of color, in the showroom. To produce such birds two matings are made.

One, a mating to produce exhibition cockerels, is made by selecting an exhibition-colored male to mate to hens or pullets that have an excess of color and are dark. This mating produces Standard exhibition-colored males. It is called the "cockerel" or "dark mating."

The other mating, known as the "pullet" or "light mating," is made by breeding a light-colored male to exhibition-colored females.

Taking their cue from this system of double matings, some have said that there are two varieties of Barred Rocks, i. e., Dark Barred Rocks and Light Barred Rocks. That position is untenable. There is only one variety, which is so mated as to produce cockerels and pullets that will meet the approval of poultry show judges.

Points in the Color

It is easy to sum up the points in the color of this variety that the judge looks for. First, the bar should be as straight across the feather as possible. V-shaped barring is objectionable, and you never can get a plumage that shows a ringy effect if the bars on the individual feathers are crooked.

The black bar should not be so black that it shows a metallic or glossy black sheen. It should be a soft, velvety black. The light bar should be as clean white as possible. The greatest improvement in this color type has been due to breeding straight bars and clean light bars. Remember these two things.

You may hear men talk about "strong undercolor." That is a

loose description to apply to what should lie underneath the surface. What you want is clean-cut under-barring, the light bar being as clean as possible and not choked with slatey color.

In breeding utility Barred Plymouth Rocks, conformation is the most important thing, following pedigree-breeding for productive qualities. Undercolor is of relatively minor importance, and, as far as the light bar is concerned, some claim that a rugged, outcrossed specimen carries a creamy light bar, and that a rather white bar can only be secured in inbred stock. The hope of this writer has been that the ideals of the fancier and the utilitarian might be combined, so that we would have in the same bird a beautiful and useful chicken. There are others who contend that "fancy" and "utility" are parallel lines which can never meet.

The new Standard ideals for Barred Plymouth Rocks call for a moderately broad feather. This is a good point to consider. Without the proper width of feather in wing flights one may soon find that he is breeding an undesirable number of cockerels with slipped wings; that is, wings in which the primaries fold on the outside of the secondaries. Narrow feathers also lead to split-open and badly finished tails. Birds that are best for exhibition and utility have a normal coat of plumage.

Barred Plymouth Rocks

By E. B. THOMPSON, Amenia, N. Y.

IT SEEMS needless to write about the merits of anything abounding in merit and worth. Things of commonplace quality need much publicity and advertising in order to make the public believe that there must be some hidden merit in the article. However, I cannot find any writings intended to show the worth of pearls and diamonds. These things are known by everybody to possess great worth and value.

A commonplace breed of poultry needs great publicity. The Barred Plymouth Rocks have never been boomed, neither have they ever required any false advertising to bring their great qualities before the people. For more than seventy years the Barred Plymouth Rock has stood in dignified isolation beyond the influx of new breeds. They are built on as firm a foundation in the hearts of poultry-loving people as the New England coast and the rock from which they derive their name. New breeds come and go. They rise and fall in popular esteem as the mercury in a thermometer.

The merit and worth of the Barred Plymouth Rocks are composed of all the qualities that make a breed of poultry valuable. They are excellent layers and they have a size and form that makes them unequalled as a market fowl. I have been told by produce dealers that the Barred Plymouth Rock commands a premium price as market poultry.

From the standpoint of the lover of the beautiful there is nothing in all the long list of Standardbred poultry that can be favorably compared with the individual beauty of a high class, down-to-date, Standard exhibition Barred Plymouth Rock male or female. The individual feathers of such a fine bird are wonderful to look at. The straight, even, precise, evenly divided light and dark bars, extending from one end of the feather to the other, with its bluish tone of color, is the admiration of an artist and when these feathers are placed on a bird of Standard size and shape in such a way as to show the "Ringlet" barring all over the bird, we have something remarkable in exquisite beauty. Underlying



Courtesy of E. B. Thompson, Amenia, N. Y.

all this beautiful effect to the eye we have the sterling utility qualities of eggs and meat, the whole forming a combination unequalled.

The only shadow in the popularity of this great breed during all of its more than seventy years' existence is the misguided desire of some people to divide the breed. This unfortunate controversy, while temporary and without justifiable foundation, has given the promoters of other breeds of poultry a rare opportunity to advance their own interests.

Let me say with the strongest emphasis that the Barred Plymouth Rock is one distinct breed of poultry and only one. Whoever may state to the contrary cannot mean what they say.

There are two families of this breed. One family, the cockerel-bred, is used to produce the Standard exhibition male as illustrated in the American Standard of Perfection, issued by the American Poultry Association. (The American Poultry Association is the highest tribunal—the Supreme Court—in all matters relating to Standardbred poultry.) The other family, the pullet-bred, is used to produce the Standard exhibition female described and illustrated in the American Standard of Perfection. These two families can be crossed and bred together, the result being, in well-bred birds, fine looking chickens. However, the highest class exhibition cockerels are produced by breeding the cockerel family by itself and the highest class Standard exhibition pullets are produced by breeding the pullet family by itself.

The shadow above mentioned has but a temporary effect on the popularity of this great breed. An ordinary breed of poultry would be unable to withstand such a controversy intended to undermine any breed with weak foundations. There seem to be no forces strong enough to weaken the foundations of worth on which Barred Plymouth Rocks were built.

The men who fashioned the breed and those who have come after them, improving and bettering the original qualities—those who have done the most to improve and bring the present fine Standard exhibition bird to its beautiful color and proportions—are unanimous in their desire that the Standard remain unchanged and that no innovations be permitted which are detrimental to the traditions and welfare of the breed.

The mating of Barred Plymouth Rocks is simple. It must be assumed, however, and the fact must not be lost sight of for an instant, that in the successful breeding and producing of any kind of live stock—whether horses, cattle or poultry—the best blood lines and ancestral backing must be employed. Males and females from high class Standard exhibition ancestors must be used if the breeder desires to advance.

The American Standard of Perfection, issued by the American Poultry Association, and the Plymouth Rock breed book are very valuable and should be in the possession of every Barred Plymouth Rock breeder.

Breeding Barred Plymouth Rocks

By JOHN W. YANT, Canton, Ohio

THE term breeding is used by poultrymen who may have quite different viewpoints of the object to be attained. There are those who own a pair of fowls and raise a number of progeny from them that class the result as breeding although none of the offspring are superior to the parents. The term breeding may be correct in this case and the breeder fully satisfied with results in multiplied numbers that will pass as fair representatives of the breed or

variety from which a satisfactory financial remuneration can be gained or the breeder's love of the beautiful satisfied.

Again there are others who expect the pair mating to produce superior beauty and utility worth and are satisfied with nothing less than unmistakable progress toward a higher ideal formed in the halls of memory. Both types of breeders are interested in the A. P. A. Standard and measure the result of their work by it but from different viewpoints. One is satisfied when the season's product shows a reasonable amount of merit measured by the Standard Scale of Perfection as found in the parent stock, while the other breeder is satisfied with nothing less than some new beauty or practical worth in the young stock produced through his close observation, high ideal and common sense judgment in selecting his breeding material. This creative type of breeder insists on knowing something of the history of his breeding material and does not depend wholly upon visible features for building the progressive mating.

As the present development of the variety rests upon the foundation of the past it will be well for us to know something of the desirable and undesirable material used in that foundation. Undesirable hereditary features are continually trying to stage a comeback; therefore the breeder should be able to detect these defects in their infancy and counteract them with desirable features found in the mate. As the grand old Barred Plymouth Rock is to be improved it challenges us to make it more beautiful and useful. When that is done and only then will we have made our contribution to the welfare of the variety for present and future days.

Therefore our first consideration in breeding the variety should be toward increased usefulness such as robust health, vigor, hardiness, rapid growth, normal feathering with ability to produce a profitable number of eggs annually up to three and four years of age. All these features are found in the variety at the present time in the yards of our most careful and experienced breeders but can easily be destroyed by wrong methods of environment such as over-showing, wrong feeding, lack of exercise, poor ventilation in housing, overcrowding, etc.

Defects to Be Guarded Against

Probably slow feathering and twisted wings have caused the most annoyance in many yards. There are several causes for this defect. The variety should feather at a medium rate, not fast like a Leghorn and not as slowly as a Brahma and these features are easily controlled by the breeder (where the chick is properly fed and not allowed to crowd in the brood coop) if familiar with his breeding material from chickhood to maturity. A well fed chick of the variety with right brooding conditions should be well covered with chick feathers at eight weeks of age. All chicks one-half or less covered with feathers at this age should be marked and recorded as should also those that were full feathered at four weeks of age. Too fast feathering is as undesirable as too slow feathering as both extremes are on the verge of scrubdom. The fad of extremely narrow barring that prevailed with many breeders was largely the cause of this abnormal feathering, and when no account was taken of this defect and males and females were mated together both of which feathered slowly the next protest of nature was twisted wing feathers; therefore the A. P. A. Standard came to the aid of nature here and stopped further abuse by making the defect a disqualification.

The Remedy

If, when looking up the chick feathering record of your beautiful prize winning cockerel, you find that he was not fully feathered at eight weeks of age be quite careful that his female mate was pretty well covered at six weeks of age and abnormal feathering will soon cease to trouble your breeding progress. On the other end we must not mate male and female which were both fully feathered at six weeks of age or again we get into trouble by losing Plymouth Rock size and type. Always bear in mind that Plymouth Rock features are between Mediterraneans and Asiatic form which has given us the most desirable weight as recorded in the Standard for the variety. Therefore, weights under or over these Standard weights should be considered defects requiring attention in mating.

Color

Here great care must be used to avoid mistakes in mating and the best rule to follow is: Don't concentrate too much on the importance of one or two sections. Many a promising young breeder has pawed into saddle section of back looking for color and underbarring until all other beauty and useful features had silently stole away, far past his ability to redeem them. This persistent digging in undercolor of back is a relic of bygone days. In the past it was practical when working to get away from cotton undercolor. Then at a later date when dark undercolor replaced cotton the next move was to cut up the dark into barring. Underbarring is now well established in all well bred lines but the old habit of pawing into back section to decide the value of the most beautiful and in all sections seems to have the lure of Eldorado quality to many. Saddle sections should be considered but only equally with other sections of color and pattern of barring.

Always bear in mind that uniform color of surface as a whole is of first importance as those light necks, rusty shoulders, metallic coverts, smutty barring, broken bar, splashy division of bar, light tipping on neck, breast, fluff and wing, open and weak breast barring—all of them are old persistent faults temporarily driven away but always ready to return. They are much like bad habits of man, not fully grown at first and not so difficult to discard if taken in time but close observation must be practiced to detect evidence of their comeback. While we are giving too much attention to the backdoor (the saddle section) a host of undesirable faults will be coming in at the various other doors, such as breast, neck, shoulder, wing, tail, surface color, narrow feather, poor shape, etc.

Barring

Barring of equal width, straight across the feather, uniform pattern in all sections is the goal. Here again we find breeders and judges too often depending on saddle section alone in deciding merit of equal division of light and dark bar. This section is usually the last to lose the division of color and is therefore a poor section to watch for departing merit, especially when there are plenty of other sections such as neck, breast, fluff and wing that will show the approaching defects in infancy. Try for equal width of bar in these sections and back section is not likely to give you great trouble. Get tipping as near perfect in the breast as possible, as uneven, open barring with defective tipping on breast is one of the most positive marks of poor breeding and should always have close attention. Too many of our show males have excess of dark bar, especially on surface, and in too many exhibition females the light bar prevails in width in all sections except back and saddle. Try for uniform division over all, a well balanced Barred Plymouth Rock in shape, color,

and barring; but do not expect your beautiful pair to reproduce on the plan of the rubber stamp, as all specimens have at least slight variations, leaning toward various features that can be used by the constructive breeder in building his ideal. However, close observation must be practiced to detect and handle undesirable features in such a way as not to mar the good work as a whole while building for new beauty and increased practical worth.

Begin the study of your chicks for valuable features, continue throughout their growth and final finish in development. Note on your record any worthwhile features or defects you may detect as many of these things might slip your memory or not be apparent at time of mating. You will then be in a position to weed out undesirable variations and save that which promises something good. Now with a clear understanding of the ideal as given by the A. P. A. Standard and your knowledge of your material to work with, you will be in a position to help put the grand old American favorite on the highest possible pinnacle of beauty and practical worth for present and for future days.



Judging Barred Plymouth Rocks

By NEWTON COSH, Vineland, N. J.

WHEN one stops to consider that the Standard of Perfection gives a clear and definite description of just what is desired in an exhibition Barred Rock, the judging of this, or, for that matter, any variety appears to be a simple task which anyone with ordinary intelligence could master with a little diligent study of that book. Without a doubt the Standard does give you a clear description, both written and in picture of what is desired; it does tell you what value to allow for the different sections, but the very fact that no two birds are alike is what makes the applying of the Standard a matter of difficulty.

Just the other day, I was reading an article dealing with one of our most successful men, in the course of which he was asked the question of what quality, other than honesty, he valued the highest when selecting a man for a position in his business. His answer was: "A man with a balanced brain, for without balance no man or, in fact, business can be an unqualified success."

If I were asked the same question in reference to the most important qualities for a judge to possess, I should mention balance as being secondary to honesty and a working knowledge of his subject. By balance, I mean to have the knack of balancing up the good and poor qualities of the specimen. A great number of breeders will absolutely refuse to consider a bird because it possesses some defect, the seriousness of which they overestimate. Therefore, I would say to you who are selecting birds for exhibition to select the best balanced specimen you can and do not discard him for one defect because the perfect bird has yet to be bred.

Before going on to what I look for and my method of judging Barred Rocks, I want to discuss certain conditions which often influence awards at a poultry show. These same conditions apply to people purchasing birds from another breeder and very often result in the purchaser being greatly disappointed in the bird he receives, when he first examines him.

One of the greatest factors with which we have to contend in judging, and which escapes the average student of poultry, is the effect of light on a bird's color. Few breeders seem to have a full realization of the

part light plays on color. Did you ever go into your poultry house and feel discouraged because your birds looked so far below what you had imagined them to be? I have and so has every good breeder. A few hours later and the same birds will look like "a million dollars," as the saying goes. This difference is caused solely by the effect of light. It is the same in judging in the showroom. Examine two birds in one aisle and one looks the better color; examine them in another aisle where the light strikes them differently, and the other bird will appear to much better advantage. This is the reason why it is very unfair for anyone, no matter how competent he may be, to criticize awards later in the week when the light may be altogether different. It also explains why you are sometimes so disappointed when receiving a purchased bird, which makes it advisable to study the bird under different lights before arriving at a decision.

If you will stand in the aisle of a showroom and observe the people looking over the birds, you will invariably notice that the bird of good size, shape closely approaching the Standard, along with a beautiful surface color, is the bird which immediately appeals to them to the extent of taking up the variety. Therefore, in judging I endeavor to make my interpretation of the Standard one that will place the ribbons on birds which will appeal and look sensible to the observer.

I like to see a bird which gives you the impression of not only being balanced, but also as having style and furnishings which set him apart from the ordinary run of chickens. This style is on a parallel with that observed in people. Two people of equal looks and dress may come into a room, but one will immediately attract your attention and hold it. We lay this attraction to personality in people, and this same attraction seems present in some chickens which makes them appeal to you and stand out from the rest.

Times without number, I am approached in the showroom and asked the question: "Which is the correct color, the lighter or the darker shade?" A bird can be good color and be on the light order, and he can be just as good a specimen and be of the darker shade. It isn't a question of whether a bird has a light or dark color, but it is the quality of that color which counts.

It is the color of the light and dark bars which determines just how good a color a bird has. Almost any breeder of Barred Rocks knows that the Standard calls for straight barring, with the black and white bar showing a contrast, but many of them do not seem to recognize it, or at least refuse to.

The day has gone when a bird of a dark and unclean color can win at our national shows. The winner of today, or the modern Barred Rock, must possess good straight barring with the black and white bar showing a contrast. As I have explained time and again to exhibitors where I have judged, the white bar plays a most important part in determining the color of a bird. If the black bar is clean cut on both sides, the white bar has to be, and you will be rewarded with a bird of beauty. Many birds are kept from being good ones only because their white bar does not possess a clearness to it which causes that beautiful tone of color, which is impossible to describe and do justice to, and in direct comparison with which it is impossible for other color to look good.

Another place where many err is in going wild over undercolor to the point of neglecting the more important qualities. Undercolor, to a certain extent, is called for in the Standard and is necessary, for without it we could not breed the beautiful specimens which now grace the winning coops at our shows. But some breed for undercolor until they reach the point where they have "too much of a good thing." Too strong and

heavy undercolor will prove detrimental to the surface color, coming out as excess color, and it is impossible to secure the desired surface with extra strong, heavy undercolor. Understand me, I want and demand undercolor, but I want it of a clear color and consistent with color appearing on the surface.

Any bird is liable to be just the least nervous or high strung when on exhibition and very often will not show up at the time the judge makes his awards. My first thought is to obtain an impression of the bird in its natural pose. Experience has shown me that this may best be obtained by working carefully and doing the necessary shaping with my hands rather than with a judging stick, which often has the tendency to frighten a bird and throw him into an unnatural pose.

Having thus secured a definite impression of the bird's natural shape and style, I mark him for shape on the coop card and proceed with the examination of the bird for color and secondary qualities, keeping the ideal always in mind and seeking to balance the good qualities with the defects so that my winners may be birds with the best all-round qualities as discussed in the fore part of this article.

Before making my final decision, if the competition is very close, I always subject the birds to direct comparison. That is, I compare all birds which have a chance to win, section by section, under the same light. It has always been, and still is, my contention that it is impossible to place your awards with assurance if you do not subject them to comparison under the same light conditions. You cannot carry the exact quality of a specimen's color in your mind when one bird is at one end of the aisle and the other far removed.

Two years ago at the Madison Square Garden Show a breeder of a variety other than Barred Rocks exhibited a few birds in his class. This gentleman had been a big winner in the south, where he is located, but at this show failed to place a single bird. While talking with him after the judging was completed, he said: "Do you know, I am mighty glad I brought my birds along with me even if I did not win a ribbon. If I had merely made the trip without my birds, I would have sworn I could have won all along the line, but in comparison with these birds here, mine do not look like the same birds they did at home." This man was a good fancier, and his comments struck the nail on the head, and brought out clearly the necessity of comparison if a judge is to place the winners with surety.

This article is headed "Judging Barred Rocks," and in reading the foregoing comments, it may seem to the reader that I have rather strayed from my subject. My idea, however, was to try to give my readers an impression of what is desired and the value which should be placed on each quality, rather than to discuss the technical side of judging.

As a summary, I should advise the younger judges to place and the exhibitors to select for exhibition birds that are good, all-round, balanced specimens, giving preference to shape and then demanding birds with good straight barring and clear color. Make your awards appear consistent; have your winners all the same tone of color and character of barring as far as the birds exhibited permit.

In conclusion I want to advise and urge every breeder and judge to not only attend one of the national shows, but also exhibit your birds in competition with the best. By so doing, you will be enabled to tell just where you stand; and you will find that the competition you will meet, and the leading breeders you will come in contact with, will tend to make your advance doubly fast and will be a great aid in bringing the judging to a more uniform standard throughout the country, resulting in more and better Barred Rocks.

Mating Barred Plymouth Rocks

By F. H. SHELLABARGER, West Liberty, Iowa

I RECOGNIZE the fact that this subject is one that has puzzled the minds of the greater majority of persons who have attempted to breed this variety with a view to producing Standard exhibition birds. For many years in the early history of this variety those who bred and exhibited them endeavored to do so along the line of what was then known as single mating. The Standard for Barred Plymouth Rocks has always demanded that the male and female when shown in the exhibition pen should match in color. The males were always lighter in color when bred from a so-called exhibition mating.

Some time between the years 1888 and 1900 a few breeders who had been making experimental matings discovered that by using what is now termed the double mating they were able to produce males from a Dark mating that would more closely match the color of the females bred from the Light mating. In order that one may more fully understand the present day terms, the most successful breeders are either specializing in one or both matings which are called Light and Dark.

We shall proceed to describe first what is termed the cockerel mating. This is not a mating, as some have supposed, to produce all cockerels but cockerels to conform more closely to Standard color. This is termed a Dark mating and the product is also termed the Dark line. The first and perhaps most essential consideration is the selection of the male to head the pen. He must be Dark in color and the product of a line that his sire and grandsire before him conformed to in order to insure results as a breeder. Always keep in view the fact that nature keeps pulling against any perversion which tends to overcome it. The dark pigment in the male's plumage must be kept of sufficient strength to overcome this tendency.

The character of his barring should not be overlooked. See that the dark bars are narrow and run parallel or straight across the feather. The light and dark bars should be of equal width and continue the entire length of the feathers in all sections, each feather ending with a dark tip. The dark barring should be modified black in all sections.

The next important requisite in the male is vigor. This characteristic is highly desirable from a breeding standpoint if you desire that he leave his stamp on his progeny. Like only produces like under the most favorable conditions. See that he conforms closely to the Standard as to shape and size, then select his mates. If the male is a cock, select from eight to ten good, vigorous, well developed pullets. On the other hand if he is a cockerel, then select and mate with him from eight to ten two-year-old hens. See to it that they are good in shape with strong bone and plenty of size, for size is more frequently influenced by the female than by the male.

One other very important feature on the female is the comb. Remember if you want good combs on your males you must have them good on the females to start with. Faulty combs will follow the females to a greater extent than the males. Just why this is so I am unable to tell; nevertheless it has proven so in my experience during the forty-three years I have watched the results.

They, too, must be dark in color. The best evidence of such females being suitable is found by the fact that brothers to them proved good show cockerels. What has been said with reference to the plumage on the male will apply with equal effect to the females. The dark bars

should be fully double the width of the light ones and straight across the feather. The tipping of the plumage should all end with a dark tip. This gives the finish and effect. Then as to legs and toes—while the Standard calls for yellow shanks and toes, they do not all come that way. Remember it is just as natural for a black chicken to have black shanks and feet as it is for a dog to have fleas; yes, even more so. Then is it any wonder that the dusky yellow and sometimes black spots will appear on the shanks or toes of the Dark females? While they are defects yet they are not serious as long as you are able to keep the legs and toes on the males yellow. Watch out for any willow or greenish shade. When such appears it is an abomination and when found on males there is very little chance for such a male to get into the prize money in any show. Eyes should be reddish bay—some are not. All first class breeders usually discard those that do not have reddish bay eyes.

The Light mating is intended to produce exhibition or Standard colored females. Some years past this mating has been termed a pullet mating. Some persons who did not fully understand what the term meant got the idea that from such a mating the eggs should all hatch pullets. You can well imagine that when a party bought a setting from a pullet mating and had the good fortune to hatch twelve chicks and raise them, only to find eleven cockerels and one pullet, the party was sorely disappointed for "the roosters have stopped laying eggs even down in Kansas" as went the burlesque song a few years ago.

The male to head a Light mating should be of Standard type, good bone, with Standard weight or over. He must have plenty of life and vigor. He might also be termed a scrapper from the word "go." In order to more fully judge such a male we always consider it a matter of no little importance to see his sisters. If they are really high class show pullets, then you have some proof of his quality as a breeder of Standard colored females. At this time some breeders show very fine looking Light males but forget to show the females raised from the same mating. My idea is that when a person can win on males in the Light line and the pullets are not good enough there must have been something wrong with the mating. In such cases, the desired end of such a mating being exhibition females, it stands to reason the result was a disappointment. A male that has the evidence backed up by the quality in winning females is surely the one most desirable to head such a mating. The females which have the Standard or even divided barring in all sections with size and shape, good eyes, combs, legs and beaks will give results. Insofar as the Standard goes, we only have the exhibition male and female. The good ones are always in demand.



Barred Plymouth Rocks As an Ideal Fowl for City and Suburb

By CLARENCE J. BEHN, Chicago, Ill.

IT IS quite timely to use this breed book to bring to the attention of our readers the Barred Plymouth Rocks as an ideal fowl. Often we are confronted with the question: What do you consider to be the best variety for a small breeder? It is rather a difficult matter to say which is the best variety with entire impartiality. Many of our breeds have been so carefully studied and cultivated, the improvement in producing qualities has been so realized that it is remarkable to note

the achievements which have been made. There is a wide range to select from; in consequence, each breed claims points in its favor. It would be particularly inapplicable to advise people to raise game fowls, simply by reason of their being your individual preference. It would be better for all concerned to advise somewhat along the following lines: Select for your ideal the breed that most strongly appeals to you, and that you can work with to the best advantage. The one that especially wins your admiration is usually the breed that will be the most profitable one for you.

Speaking of admiration in the foregoing paragraph brings to our attention the Barred Plymouth Rock. Our people are so familiar with Barred Plymouth Rocks that we can say unhesitatingly that the breed is America's foremost; at least this question has not been disputed. Both in respect to outward appearance and other well-known questions of excellence this particular fowl immediately takes hold of our imagination and brings the breed up to our highest ideals.

Barred Plymouth Rocks have been bred for nearly three-quarters of a century and have established a world-wide prestige, which is conclusive evidence that they possess qualities which make them highly profitable and of more than passing note.

Allow me to bring before you a picture which you have often seen, but perhaps never seriously realized until now. I am going to try to put this picture before you with the object of convincing you, as one who may be skeptical, that the breed of Barred Plymouth Rock is sure to be your ideal. All of us have at some time or another shared in an auto trip down one of the innumerable state roads, enjoying the fresh country air and the rural scenery. Now let us take this trip again, this time with thought and consideration, bringing back to our mind the passing of fields, orchards and gardens, the farmhouses and barns and silos which show signs of upkeep and development. On some of the farms our attention has been drawn to the fine live stock consisting of cattle, swine, horses and poultry. Being more or less interested in poultry let us center our mind right here. When we passed John Doe's farm and saw that uniform flock of Barred Plymouth Rocks, with its snappy symmetrical appearing females and the stately aristocratic and ever-alert males promenading among his harem, did we not express a feeling of admiration? Was not that scene the topic of our conversation for some little time in the continuing trip?

The picture which I have tried to put before you is to suggest to the contemplating city or suburban poultryman that in accepting Barred Plymouth Rocks for his ideal he is making no mistake. As a further persuasion to the acceptance of Barred Plymouth Rocks we should also tell what their other qualities are outside of fancy.

Usually when a person living in the city or suburb raises poultry he has a motive outside of fancy. Before he can be a real fancier he must be taught the art of breeding with judgment, care and patience to bring out the good qualities. Then the question arises—will he be able to successfully dispose of his product? In order to dispose of a product whether it be manufactured or as in our case, bred and raised, there must be something for which there is a demand. Right here is where the Barred Plymouth Rock fits in. Barred Plymouth Rocks are what can be termed a man-made variety. By that I mean to say that when our breed was in its beginning the foremost question in the mind of its originator was to breed a fowl that would be an all-round fowl; a fowl that would be considered for table, producing and fancy. Varieties were bred together that meant beauty, weight and egg-producing qualities and

we can feel assured that the originator struck the nail on the head when he started.

We have in our Barred Plymouth Rocks a variety of fowl that our housewife prefers for the table; it makes a choice breed for broilers, fryers, roasters, stewers, and it is one of those preferred for caponizing. It possesses a nice clear skin when dressed. As for egg production, look at the records established by the breed in all egg-laying contests and there we have the answer. There is no argument; they are a most profitable breed. Barred Plymouth Rocks need no more care than any other variety. Give them clean quarters, ventilated roosting quarters, clean, wholesome food and a run which will permit them to move about and exercise and they will be satisfied and do well. Confinement is no hindrance to their good producing qualities.

As we go along we become more and more fascinated and the desire to establish ourselves becomes noticeable. Here is where better stock is obtained and headway started, bringing the breeder into the showroom and if ability prevails, a new fancier put forth into the field. A fancier is not generally made, he is born—and people err sadly when they undertake to go into the poultry business in a day. The outcome of such a procedure is inevitable failure and disappointment and brings down imprecations upon the industry from the individual whose ignorance is greater than his ability. I feel quite positive that all of us possess a desire to raise purebred poultry and I am further convinced that all of us can make a success of it providing we give to it the proper attention and thought and effort, without being ambitious to clean up the breeder and fancier who has spent time, money and patience in perpetuating the breed as we have it today.

Success Depends Upon Effort

By PETER BROWN, Burlington, Wis.

WHEN one is about to engage in an undertaking with which he is not familiar, there is no harm done in gathering all the information possible bearing on the proposition. But that is only the beginning; this knowledge so gained must be applied before it becomes powerful in the work one is to do. Particularly is this true in constructive breeding of Barred Plymouth Rocks. Like all other breeds and varieties, the Barred Plymouth Rocks attract a certain number who are not willing to pay the full price in plain common-sense study of the birds themselves for lasting results, but prefer taking a "short cut" and, after purchasing stock from an old experienced breeder and studying up the subject from print, believe that with their ultra knowledge they can get to the goal ahead of all competitors. Such people usually quit before they learn that success in the breeding of Barred Plymouth Rocks, or any other variety, cannot be bought or stolen, but must come as the results of concentrated effort.

In almost every instance where success was not attained, it was either lack of the right breeding stock, or, more likely, haphazard handling, mating and breeding.

For nearly 30 years the general demands of the Standard have been very similar to what they are right now and through all these years earnest, constructive breeders have been working "on their own" to obtain the quality and value we have in this variety now. Year by year we have seen them improve in evenness of quality, in favor and in

practical worth, and it should be evident to all by this time that the Standard as we now have it is consistent with the nature of the variety and at which further improvements and benefit can be had. There can be but one Standard to breed to for any one variety; there can be but one Standard exhibition quality for any one variety. That we have, and those who know from actual breeding experience will be slow, very slow, to criticise the present Standard requirements. If all breeders today would get down to breeding for correct Standard requirements they would find less time trying to pull the Standard down to their breeding levels and at the same time they would get more results for their efforts.

The fact of the matter is breeding Barred Plymouth Rocks is not merely a mechanical process. The elements with which the breeder works are living organisms as well as chemical compounds that require merging and blending, with an intimate knowledge of the breed, at the direction of man who has in his possession an ideal toward which he is striving in his operations, for with the withdrawal of man's direction immediate retrogression results.

And yet we hear of some who say, "but it's nature for the males to come one way and the females another, and all breeders must breed just this way or that way to counteract, overcome, etc." They forget that Barred Plymouth Rocks are not a natural breed or variety in that sense of the word. They are a made variety, man working with nature, and man decreed that they should be alike in color and barring. Those who have put forth the greatest efforts in time and study have demonstrated that they can just about make them as they wish.

The uniformity in color of wild birds justifies line breeding and demonstrates, without exception, that "like produces like." Man working with nature, ever patient and trusting in the future, has made the progress to date. Every condition points to further progress and greater popularity.

Males and females matching in color and barring! How simple, how plain! All can meet on this common ground and make no sacrifices detrimental to the blood lines one has been years in establishing, leaving it optional with the breeder to employ his own methods of mating, working with nature to meet the success which awaits him.

Those that would jump off after 40 years of trying and meeting with pronounced success, simply because they find it's not "fast and easy"—Oh! well! Shakespeare has said:

"But man, proud man,
Drest in a little brief authority,
Most ignorant of what he's most assured,
Plays such fantastic capers before high Heaven
As to make the angels weep."

What Barred Rocks Mean to the South

By G. R. SIPE, Extension Poultryman, State College, Miss.

THE southern people in choosing their breeds of poultry have found it economical and remunerative to stop on the first page of the Standard of Perfection and settle down on the Barred Plymouth Rock breed. To a considerable extent this breed of fowl is well named and reminds us very much of the sturdy settlers who landed at Plymouth Rock. This breed, as experience has taught us, is one

that is easily kept where we want it to stay, or to put it in an everyday slang expression, "they stay put." This does not mean, however, that the Plymouth Rock is an indolent, expensive and useless breed of chicken, as we have a great many people who are Barred Rock breeders in the south who at the end of the year show as great a profit on the right-hand side of the ledger as with any breed of fowls used. I am pleased to quote you results from one of our demonstration farms that kept the Barred Rocks. This farm last year (1923) showed a net profit of \$3.65 per hen and 166 eggs per hen per year and remember that this profit was made from the sale of market products with the exception of a few eggs to the hatchery at a very small premium over market prices. This I think speaks well for the Barred Rocks for southern conditions and of course all Plymouth people realize that the only difference in the variety of Rocks is the color pattern.

Our experience teaches us that it is possible to make high egg records with this particular breed and where a small flock of fowls is to be kept the efficiency can be held up on an equal with most any breed and I think that is why the Plymouth Rock is as popular as it is. We have a multitude of people maintaining small flocks. The average number of hens kept by farmers is very little in excess of 25 if any. In my own state of Mississippi the average is slightly below this figure. In addition to the ability of small flock owners to maintain high production, in the Plymouth Rocks they also have the advantage of a good heavy meat fowl that reaches broiler and frier sizes in record time and commands the highest prices. I do not mean to say that other breeds are lacking and are inferior to the Barred Rock for broilers but I do believe that the Barred Rock makes an outstanding frier. Now from this standpoint of broilers and friers I see another reason why the Barred Rocks mean so much to the south, because we have in our southern cities excellent broiler and frier markets that last from 4 to 6 months during the spring. These broilers and friers from the Barred Rocks with their nice yellow skin command the very best prices.

There is still another reason why Barred Rocks have meant a lot to the south, but we are not especially proud of this reason, yet it is a fact nevertheless. The poultry flocks in the south have to a large extent been feeding on corn primarily. This one ration of course does not furnish the necessary food constituents for a high egg production; therefore, the breed that puts on the most weight as hens is the breed that has brought our farmers the best prices. Now we do not sponsor the old method of feeding an all-grain ration alone, relying on the sale of hens for a profit, but as I stated before it is a fact and the point I wish to make for the Barred Rock is that it is a breed that will take on fat very readily in the second year under such treatment and will therefore bring the most money to our farmers. We have shown above that this particular feature is not a handicap to the Barred Rock family, for under proper conditions and the right systems and management our demonstration farms have proved that all small flocks of fifty hens or less can be made to show a profit as great as or greater than any breed.

There is another factor that I consider of greater importance than any yet discussed. That is the fact that Plymouth Rocks make excellent sitters and mothers. Again I do not believe in or encourage the use of hens in hatching and rearing of chicks, yet it is a fact that a great majority of southern people use the natural way and methods and we may just as well admit it. Therefore the problem of sitting hens is a very

great one to the southern farmers and poultry breeders, and the hens that will sit the earliest and best and take care of the chicks after hatching them are of no little value to our poultrymen. It is very important that the chicks that are to be kept for layers be hatched in the proper season and even though it is impossible to do that with the natural methods, the Barred Rocks as sitters and mothers come nearer filling the bill.



Breeding White Plymouth Rocks

By WM. A. HALBACH, Waterford, Wis.

JUST what points do we desire to cover in this article? What are our aims when we talk or write about the above subject? In pondering over these questions we must first of all decide on just what we desire to produce in our breeding pens. No matter what sort of a mating you are putting together, you cannot get anywhere unless you fully know what ideals you hope to work up to and what you would like to accomplish. Then too, a single season cannot bring your ideals to a happy conclusion. Each succeeding mating, each succeeding generation should show a closer approach to your breeding ideal. Then, and only then can you find satisfaction in your work and say, "This mating is a success."

Now in this connection it happens that the writer since his childhood days has been working along ideals in breeding White Rocks. It was my good fortune to have been taken into the confidence of my father, who for many years was an ardent and successful fancier. In a sense I grew up with the White Rocks and almost every year of my life has been closely woven with each succeeding generation of White Rocks that was being produced.

A quarter of a century ago, the beautiful White Rock was far from the wonder bird it is today. Indeed the very best of that period would be called very ordinary today and would scarcely find sale for breeding birds. Too many of the early types were very stilty, showing V-shaped bodies, with short backs, and very high tails. Then too, the color was not especially well established, as a rather large percentage of chicks produced would show brassiness in plumage. Head points and eye color at that time were much the same as the general run of combs was quite fair, while we have in over 25 years used more than a dozen birds as breeders with poor eye color.

From the tools—the early White Rock—one had to work with, there has truly been a wonderful improvement. Possibly no other breed has won so many sweepstakes, championships in all sections of the country as have White Rocks. This is not due to accident but greatly to the fact that much thought and effort was put into the work of breeding better, more serviceable, more profitable poultry.

In our own breeding operations, we have most zealously avoided using birds that showed an apparent lack of vigor. This one feature to me is really the outstanding requisite for successful matings. Without it you cannot get to first base, unless the other fellow makes an error and then invariably you will be caught trying to get to second base. Whether your desires are along exhibition lines only, egg production lines only, or the ideal combination in which these two grand qualities are put into one and the same bird, you must build your foundation upon that solid foundation—vigor—or the result of your work is sure to crumble.

One does not always have all the good points in his breeding birds that one desires. However, this is where the art of breeding comes in. Always try to balance defects on the female side with a strong point on the male side and vice versa. Sometimes one must use birds that possibly are not show birds but birds that possess just what one is after. For instance, one of the most difficult features to breed into a flock about fifteen to twenty years ago, was a low tail. Almost every bird you ran across was high and had a rather pinched tail with not as much

width at the saddle as he should have. We happened to produce one single cockerel whose tail was carried abnormally low but by carefully breeding him, keeping track of his progeny and using only the choicest, we were able to produce the kind of back and tail that we desired and which is now demanded in the latest edition of the Standard of Perfection.

Another rather hard proposition to tackle from the breeding angle was getting birds that were truly pure white and that would not turn brassy. Almost discouraged with lack of results, there finally appeared a cockerel that was beautiful in all respects, and had the most dazzling white color we have seen to that time, but was very bad in color of shanks, as they were almost white. This was a disqualification but we kept him around during fall and winter and noticed that where other birds were yellow and inclined to turn brassy, this chap held his color splendidly. He was therefore chosen as a pen header, but we were careful in choosing females that were strong in deep yellow leg color. The results from this mating gave us our first line of pure snow white and STAY WHITE ROCKS. Since then we have found it often necessary to introduce occasionally a bird with shanks a trifle light as we can then keep that wonderful snowy white plumage as well as deep yellow legs.

To illustrate along general ideals, let us, for example, take into consideration factors which have brought about four different matings. Supposing a breeder has enough good birds to make four pens. At the head of Pen No. 1 is a cock bird fitting to the following description:—good five point comb, grand shape, but a trifle low on legs. At the head of Pen No. 2 he places another cock bird with a good four point comb, slightly irregular in front. He has good eyes and color, good back but his tail is too long and somewhat pinched. At the head of Pen No. 3 is a cockerel, long and narrow, comb too large to fit the head, perfect color but with pale legs. At the head of Pen No. 4 is another cockerel with a flat breast, unevenly serrated comb, broad back, but not quite long enough, yet good in other respects.

Now the breeder selects his females. He finds one that is a little high in legs, is pure white, has an excellent red eye, and is fairly good otherwise. He readily sees that this female will make a perfect mate for the cock bird in Pen No. 1.

The next female his eye rests on is a nice pullet with a six point comb, regular and even in front, short, well-spread tail, but a little creamy in color. He finds that this female will mate finely with the cock bird in Pen No. 2.

Then he picks up a hen very broad in back, with some cushion, fine low comb, creamy in color, yet with fine yellow legs—this hen he places in Pen No. 3.

He now runs across a hen with a good full breast, long body but not broad enough, yet all the good qualities to mate her with the male in Pen No. 4. In this way he proceeds to fill all of the four pens.

This is the manner that you should follow in your bird matings. Look over your females and carefully select and mate them with the male birds so that the faults of one are offset by the good points of the other. After finishing the matings in each pen, go over them again to make sure that you have mated and matched every pen properly. Do not be afraid of taking too much time. I often spend days in mating a single pen and after I have it properly mated I know my time has been well spent and will repay me nicely.

The foregoing illustrates my idea of breeding birds to give best



W. H. HALBACH & SONS

WATERFORD WIS.

results. You will readily see that it is not absolutely necessary to have high class show birds in order to produce high class birds, you must, however, have birds that properly fit together. It is sometimes the case that two fine show birds will not produce desired results and vice versa, it sometimes happens that ordinary birds, well mated beget good results, but it is the best policy not to rely on luck. Get as good birds as you can get hold of and match them in individuality and if possible in blood lines too.

Blood will tell. It is rather unfortunate that many breeders do not know the blood lines back of the birds they use as breeders. Amateurs, however, make it a point to toe-mark as many as possible, of the chicks you raise this season so that you will know the blood lines and can intelligently mate your stock next season in individuality and blood lines and you will be on the way that leads to successful propagation of fancy fowls.

Here are four things to bear in mind and to follow:

First—To have the vitality in every breeder.

Second—To select birds with good marketing and egg laying qualities.

Third—Be positive that the birds match correctly.

Fourth—Keep track of the blood lines in your birds by toe-marking them.



Condition the Keynote to Success at Shows

By M. L. CHAPMAN, General Manager, Wilburtha Poultry Farm,
Trenton Junction, N. J.

THE greatest factor in producing a winning string of birds is perfect condition. There was a time a few years back when a bird of extra quality would win almost anywhere, but with the large number of high class birds that are annually grown and exhibited nowadays it is practically impossible to win an honorable prize at a show of any importance unless the birds are in perfect condition. The ignorance of amateurs and beginners as to what constitutes perfect condition is responsible for much of the "kicking" and dissatisfaction with the judging and management of poultry shows.

For instance: A buys a cockerel from B for \$45 to exhibit at his local show. The cockerel arrives just before the show, fixed up and conditioned in every way. All the important feathers are in shape and any minor feathers that might have been off color are minus. The cockerel wins first and A is much pleased with his investment and probably buys more stock and eggs from B. When the next show season rolls around A makes a large entry and mentally figures up how much the first and second money in all the classes would be, for, of course, he will win.

When the judge handles his fine bird that won first the year before he is liable to find one sickle feather gone, two or three wing feathers broken and a number of off-colored feathers that should have been pulled. It does not take the judge ten seconds to see that there are plenty of other birds there that will beat this one, so he puts him back in the coop and wastes no further time with him. For similar faults, his young stock probably does not fare much better. Our amateur friend is furious; he has been robbed. The judge hardly glanced at his bird; did not this bird win first last year and did he not pay more money for his stock



FIRST PRIZE WHITE ROCK COCKEREL & CHAMPION MALE
ALSO SHAPE SPECIAL, MADISON SQ. GARDEN N.Y. 1924.
FRANK H. DAVEY, MIDDLETOWN N.Y.

than the fellow who won? His stock must have been in good condition, as he had the most expensive henhouse in the vicinity and paid the highest price for his grain, etc. Or, perhaps it is the breeder who sold him the stock who comes in for condemnation. Men who are reasonable about everything else often act this way and blow off a lot of "tommyrot" they are sorry for afterward.

A great many would-be exhibitors get no further than this second exhibit, and after spending considerable time and money, they quit the fancy in disgust just when a little persistence would enable them to realize handsomely on their investment. I believe that this lamentable state of affairs could be largely overcome if every amateur would make a thorough study of what constitutes perfect fitness of the American show bird.

A bird to win must carry all of the wing and main tail feathers unbroken. The cuts that the judges are instructed by the Standard to make for these omissions are so great that in close competition a bird so handicapped has little chance at the blue or red. Everyone should inform himself as to the exact weight that his particular variety is to weigh in the showroom to pass uncut, for in a score card show, this is a great factor. A bird that was absolutely clean-legged last season may sprout a little down on shank or toes. Better use a microscope than to let the judge find it. Don't let the old hens get overfat, as it makes them look older than they really are, and unattractive.

Perfect cleanliness is essential, especially in regard to white birds. This is one of the arts of the profession. There are only a few men who have been able to put white birds into the showroom in the best possible condition. The general information that has been given out by the poultry press in regard to this matter is all right, except that it doesn't go far enough.

My first correct impressions as to the proper way to wash anything came to me while I was in the army, where every man washed his own clothing. It did not take me long to find out that my handkerchiefs, etc., did not look "just like mother used to make them." Upon investigation I found that to wash anything snow-white was quite a lot of labor. It required much soaping, boiling, rubbing, blueing, etc. One simple wash in warm water didn't do it, not by a good deal.

To wash a large string of birds for a show is quite a task. The way we prepare our white birds is as follows: About three weeks before the show, if we are to exhibit, say, 30 birds, we select about 45 and give them a good, thorough wash, using Ivory soap and water about as warm as we can comfortably work with. Use a brush on head and legs, and on any stained spots in the plumage. Rinse very thoroughly in a separate tub of water that is a little cooler, and then dip in a third tub of water that is slightly blueed and that is just tepid. Do not have water too blue, as a bird that gets streaked with blue is ruined for the time being. Do not wipe the bird with a cloth or try to squeeze out the water with your hands. Simply drain for a moment or two over the tub, then put in a cage with a burlap bag on the bottom to catch the water. Have the room at a temperature of 90 to 95 degrees, and, if possible, keep the unwashed birds in a cooler room. The birds should be practically dry in four hours. We put the wet birds near the stove and gradually work them back as they dry. Reduce the heat in the room gradually as the birds dry off. You can wash about five birds in a tub of water, then empty out all three tubs and replace. Of course, soft water is much

better for this purpose than hard water. It will take two or three men about all day to wash a string of this size, and it is not an easy job either.

After your 45 birds are all dried out, you can go over the string and pick out the birds that did not improve with a wash, so to speak. Some will prove to be considerably whiter than others; some will probably have stained spots on the plumage that no amount of washing will remove. We select about 35 and take special care of them for another week and then give them another thorough wash. This second wash improves them fully as much as did the first one. After they are dry, we make our final selection of the 30 that we shall show.

The greatest care now is to place in the judge's hands without their being soiled in any way. Feed hard grains from now on. Have a man continually in attendance. When you are ready to ship, provide a roomy shipping coop for each bird; this is important. Take a cloth and brush out the inside of every shipping coop before putting birds in. Also see that no tacks or nail points show inside the coop, because a bird will easily tear his comb on these and arrive at the showroom a mass of blood-soaked feathers. Wipe out every cage before putting your birds up. Have a lock on every cage when you are not present, as inexperienced people sometimes bother and hurt the birds by taking them out of the coop. See that your birds do not eat and drink too much, as birds that have been in transit are generally hungry, and as the feed cups usually contain twice as much as a bird should have at one meal, they are liable to gorge themselves and thereafter be sick or "dopey" for the rest of the week. Be on hand early in the morning the birds are to be judged and see if all your charges are looking their best. A little cleaning up at the eleventh hour sometimes saves a ribbon for you.

White Rocks—Their Past and Their Future From All Angles

By CLARENCE TERVEER, Specialty Breeder, St. Charles, Minn.

SURELY no other variety, in the dual-purpose breeds at least, has made greater strides in popularity during the last decade than the White Plymouth Rocks—due to a large extent to their rugged health and because their size, shape and color are so suitable for those who look most to the commercial side of poultry. It is a well-known fact that white is the most practical as well as the most popular color for those who cater to the production side of the poultry business, because a bird, even if not pure white isn't conspicuous or unsightly as is the bird off in color in the flock of other varieties.

One of the many blessings that the person who takes up the breeding of White Rocks is bestowed with is that one mating will produce a larger per cent of exhibition cockerels and exhibition pullets than any other known fowl on earth. Hence, the task of combining the fancy and the commercial poultry interest isn't so complex. When one is observing the general quality of the entire show in an unbiased way, it is apparent that uniformity and correctness of size and type are more pronounced in the White Rocks than in other varieties.

I think we should take our hats off to the eminent breeders of this variety who advertised the merits of their strain in such a way as to boost the variety in general. This very thing materially assisted in

bringing the White Rocks to their present magnitude. Great credit is due that skillful breeder who produced the world's first 300-egg hen. Alas! It was a White Rock.

The popular trend toward a dual-purpose fowl has come to stay and the White Rock breeder will receive the greater part of this trade of supplanting the yards of those who will continue to put the egg breeds and the parti-colored varieties in the discard, if the sponsors of this variety will keep it a truly dual-purpose fowl. There is a tendency on the part of some breeders and judges to favor the birds of extreme size which are almost sure to be coarse and slow maturing. We can never expect to compete against the Brahmas and the Giants for roosters, the Wyandottes for broilers and frys, the Leghorns for eggs and get anywhere with this conglomeration of qualities. It is an utter impossibility.

Like the dairy cow, a hen must have refinement of type and not be extremely large to be the best producer. Birds of the extreme size—say the twelve-pound cock and the ten-pound hen in the Plymouth Rock breed—are not plump enough at the broiler or the fry age to market advantageously, nor will they make satisfactory winter layers on account of the longer period of growth required to get this extra size. Then, too, the larger birds are clumsy, inactive and poor hatches are the rule. Be content with birds of Standard size—at least not more than one pound over in the females and two pounds in the males.

For the best interest of this variety, the judges should be somewhat lenient on combs and wattles which may seem to be a little over-size for the Plymouth Rock breed, provided their general make-up is typical and the texture fine; but not to tolerate extreme massiveness or coarseness in any respect.



The Buff Rock for Meat and Eggs

By C. O. DILLINGHAM, Sullivan, Ind.

WHILE I have given a lot of thought and observation to this subject and am myself fully convinced of the superiority of Buff Rocks in the meat and eggs line, I have never gone to the trouble to collect statistics. This is due to several reasons, chief of which is, I think, an instinctive horror of those long, dry reports and tables in which some people seem to revel. So I shall give my own observations and deductions, much as the old lady gave her testimonial to the land agent who was collecting data for a prospectus. Hoping to secure a nice bit of information, the agent stopped at a prosperous-looking home and found the lady of the house in her luxuriant garden. Stating his errand he asked the lady to give him an estimate of the amount of garden truck they usually raised. She replied: "Well, last year we raised a right smart; we ate a lot and canned a good deal, and had quite a little left over."

Chickens with me are not a fad, not a pastime nor a recreation. They are a means of livelihood for myself, my wife and two children, and in twenty years I have had abundant time to decide that Buff Rocks are the breed that exactly fills the bill. Being born a "chicken crank" is something you can't help. It is just as bad as being born a poet. You don't "get the fever" every spring like so many would-be chicken raisers do. You just have it the year around. You just have to raise chickens, either as a sideline or as a main line. While chickens used to be a sideline with me they have become the main line now, with farming to raise their feed as the sideline.

Handling thousands of chickens over this country in my work of culling and mating gives me a wide acquaintance with flocks of different breeds and the chance to "size up" the best paying of these flocks. Easily handled, gentle, intelligent, industrious, it is a real pleasure to cull a flock of Buff Rocks. Here you find the plump body, large abdomen that can take care of plenty of feed, and the strong, rugged constitution, ready to support the fowl through the long season of converting feed into eggs. Given proper feed and plenty of clean water, the Buff Rock is the ideal egg machine. As pullets they begin laying very early. Just the other day a lady in our town told me of a pullet she had hatched from an egg of our strain that laid her first egg when hardly five months old, laying thirty eggs before she became broody. No special care was given this pullet and she hadn't even a nest fixed for her as the lady had only a very few chickens and didn't expect any eggs so soon. Our own pullets of February, 1923, were laying right along during the State Fair in September. Those sent to the fair laid in their shipping crates on the way.

We do not trap nest, as we do not feel that the extra work would pay us when judicious culling and close observation will do the work as well. My wife has accused me of living with the chickens till I know them all by their first names.

We have a three-year-old hen that we think deserves mention. This old sister is a steady worker and while we knew for a long time she was an A No. 1 hen we had our attention called to her consistent performance by being obliged to confine her in a small building. She stole her nest in a barrel of excelsior in the barn loft last fall, and had a nice nest of eggs when we found her. After we took the eggs away she continued to lay every day for a while, then decided to lay in a stall

where we had a chicken-eating sow confined. Knowing this would be "goodbye, hen," we shut her up in a single exhibition coop, where she continued to lay every day until, thinking she had forgotten the sow's pen, we released her. But no! Right back she went! So we confined Sister Phoebe in a small building, 4x6, where she has shelled out the eggs, one a day, through zero weather and below. We put a male in with her in February and have since saved her eggs and now have some dandy chicks and about thirty eggs setting and to be set and she's still at it! If this hen ever was broody we never knew it. In all the time we have had her confined I don't believe she has missed six days laying. Twice her egg was broken. We regret that we didn't keep count of the eggs, but as that was not our reason for confining her we just didn't think of it. This is only a sample of the consistent laying propensities that have been bred into the Buff Rocks.

In this day of purebreds on the farm you seldom see the mixed flock any more. In keeping any kind of purebred poultry, we must not lose sight of the fact that unless utility is combined with fancy we cannot hope to make a profit. We breeders sell stock and eggs to people who in many cases are anxious to make a profit on chickens and spend their good money for new blood to improve their flocks. We ourselves must market our surplus stock and eggs. Therefore, the fact that the Buff Rock is the ideal dual-purpose fowl, beautiful to look upon and laying steadily those big, creamy brown eggs, or as a table fowl, dressing a rich yellow, plump, tender, juicy carcass, is giving them an ever-increasing popularity.

In general, the owner of a flock of Buffs desires to keep his pullets and market the cockerels for broilers or fries while the price is high. This necessitates early hatching, and thus two birds are killed with one stone as the early-hatched pullet is the good winter layer. For fries or broilers the Buff Rocks have them all "backed off the boards," developing in such a short time into marketable size, plump, tempting, easily dressed, free from objectionable pin feathers. In this respect again they have it over the dark breeds, the latter being now subject to a cut of one cent a pound on the market. We never have to go hunting for buyers for any surplus cockerels we may have to sell, and there is never any quibbling as to price.

In conclusion, to the Buff Rock breeder and to the prospective breeder of Standardbred fowl, if you desire a breed of chickens that for your care of them return you the maximum of satisfaction, both as to beauty of color and type and the ability to keep your egg basket overflowing, a fowl that will supply your table with meat fit for the only kind worthy the name (an American), stick to the Buff Plymouth Rock, the breed with the glorious future!

Buff Rocks and Why More People Should Breed Them

By DR. C. W. COOLIDGE, Claremont Junction, N. H.

IT IS about thirty years since Buff Plymouth Rocks were first shown in Boston and New York, and they were admitted to the Standard about the same time. I first saw a flock at Leominster, Mass., and I bought a few of them twenty-six years ago. My cousin bought stock from Burdick's place in New York and since that time I have been breeding them.

The first requisite in fowls is beauty and eggs. On account of the

Buff Cochin blood behind them, Buff Rocks are a very tender, juicy fowl. They dress off plump carcasses and no dark pin feathers, because of their plumage and skin being the same color. They are good winter layers of large brown eggs and therefore meet the requirements for the higher class poultry. They are not persistent and constant sitters, but make the best of mothers and brood their young well. A Rock weighs a pound more than a Wyandotte or Red and therefore brings more money for the time spent in dressing.

The Buff Rocks are very docile. You do not have to build a fence as high as a meeting house to keep them confined, and when you step into the hen house they do not become nervous and fly all around. What prettier sight can you find than a flock of Golden Buff Rocks with their red combs, as they scatter over a green field on free range?

If any who read this do not breed them I would advise you to try them. Get some good stock from a good reliable breeder who has a good laying strain and you will find that all I say in their favor is true. If you do breed them and do not exhibit, I would advise you to exhibit. You will find great pleasure in winning ribbons, cups and money and you in turn will be helping to increase the interest in them.

In breeding them do not mate too light a male with dark females or a dark male to light females. Rather have the color of your male breast match up with the hackle and saddle feathers of your females.

High combs and light eyes used to be one of our troubles or faults, but that has been overcome and we are now getting low combs and nice red eyes.



Partridge Rocks—Their Quality and How to Mate Them

By EDWARD A. HAMANN, Hamilton, Ohio

THIS variety is surely one of the most beautiful and useful varieties of the Plymouth Rock breed. As an all-purpose fowl and for genuine beauty they are in the very front ranks of poultrydom. All black and red varieties are at a decided disadvantage for the reason that it is with the greatest difficulty that they can be properly presented by means of illustrations. Word pictures fail when it comes to delineating chickens. Even in describing the shape of a bird the average fancier talks with his hands. Nothing tells the story of a bird more completely, more truly, more forcibly than a good picture. Especially is this true of the detailed markings of the plumage but in those varieties which have a red ground color on which black is imposed, the camera fails in its purpose, for both red and black print black in the negative and the beautiful contrast is lost.

Few breeds of fowls can compare with Partridge Rocks as a general-purpose fowl, and only those who have bred them for any length of time know their true value. Much has been said of them as a table fowl, and in this they are surpassed by no other breed, their meat being very tender and juicy, even at an old age. March-hatched cockerels will weigh from nine to ten pounds in November.

As to their laying qualities, they rank with the best. Of course, there are certain strains, perhaps, that lay more than others, as is the case with all breeds. The Partridge Rocks are exceptionally good winter layers when eggs are scarce and high priced.

The Partridge is one of the most beautiful and useful varieties of the Plymouth Rock breed. The race is abundantly furnished with plumage and anyone who has noticed show feathering should see a flock of big-boned Partridge Rocks growing and note in particular their tails coming out with an abundance of coverts and lesser sickles, greenish black in color and ribbon-like in effect. The plumage of the male is handsome indeed—greenish black in breast, body, and tail, and this rich, glossy black color is placed in contrast and made conspicuous by comparison by a red neck and back, while through the long, flowing, richly colored neck and back feathers there runs a greenish black stripe. The females are red or mahogany color, each feather of all the body except those of the neck being magnificently marked with crescent penciling of black.

For beauty, the Partridge Rocks excel all other breeds if well bred. The question is often asked: How should they be mated to produce high class birds that retain their beauty? We admit it is no easy task to breed high class birds of both sexes from a single mating unless one has two classes of females in this pen. For a mating of this kind I would take part of the females that have penciling in hackle, and part that have a clear, greenish-black stripe in hackle. To them I would mate a male that has a rich red hackle and saddle, that shows a bit of penciling in saddle and fluff, and plenty of bay coloring in outer edge

of primaries. From such a mating we ought to produce some good males and females.

Most of the successful breeders, no matter what breed of fowls they breed, practice double matings, especially in parti-colored fowls, in some way. They get their show cockerels from one pen and their pullets from another, and they think they have a single mating. If you intend to compete with the successful breeders in the larger shows, I would say double-mate, that is, mate a pen to produce your exhibition males and another to produce your females.

For a mating to produce cockerels I would take the best male I had that follows the Standard of Perfection description and to him I would mate females that have red mahogany color in each penciled section, rich red hackle with a greenish-black stripe in neck feathers. I like for the small feathers under the throat to be a very rich red. Such a mating should produce extra good exhibition males.

If we study nature and thoughtfully look into the bird kingdom, what do we see? We see that the males are of bright colors while the females are of dull color. But with our Partridge Rocks, we want to retain the beauty in the female also. Now then, we must have the color in the male that we desire to have in his pullets. We cannot expect to breed a male with a bright orange colored hackle and saddle and expect red mahogany colored pullets. My experience has been, the tone of color I expect to produce in my pullets I must first have in their sire, and not only that but he must be bred from a well-penciled hen with good red mahogany color. I would say the hackle and saddle of male should be a rich blood red in color, free from black edging but well striped, with a bit of penciling, the striping not too broad, as the black penciling of the female corresponds to the striping in the male. If the striping is too broad it will cause coarse penciling in females. Most important, the male should be broad in feather in hackle, back and saddle, and have plenty of bay color in outer edge of primaries. Sometimes from the strongest penciled female, especially well penciled in back, we get cockerels that show a bit of penciling in saddle, also quite a bit of red in breast and fluff, and I like to see that in the male to produce good penciling in pullets. From such a male I produced a hen that won champion hen and special for best bird in show, all breeds competing, at Hamilton, Ohio, December, 1919. Judge Zike said she was the best penciled bird he ever handled or saw, in his many years of judging, and if you follow the foregoing mating schedule you should be able to produce some very good exhibition females.

We cannot make a mistake if we line breed in families. That is, if we have a hen that is an exceptionally good breeder, we may put her in a pen with her best daughters mated properly to a good male of the same line, and their progeny will be more uniform. I double-mark my cockerels; that is, I toe mark them, when hatched, for the pen from which they came. Then about two months later, just before they lose their penciling, and if they develop well otherwise, I select them as breeders.

Now, last but not least, let us note type and size. No matter how good the color we have or how good the penciling, if we have this color on a Leghorn or Wyandotte for size or a Langshan for type we have no Plymouth Rock. If we breed carefully for type, size, and color, we can continue to hold our banner high as having a breed that is not only one of the most beautiful, but that is unexcelled for meat and eggs as well.

The Breeding and Mating of Partridge Plymouth Rocks

By ROY JACOBS, Ames, Iowa

THE Partridge Plymouth Rocks are among the most beautiful as well as the most useful of all the breeds in chickenhood. There is a common impression that the breed is hard to breed true to color and markings. Successful breeders know that the Partridge varieties are no more difficult to breed than any other particular variety.

The revision committee that met in Chicago in March, 1922, acted wisely in recommending a deep reddish bay for the color of the female. It is well to keep away from that color of brown or reddish brown, for brown is a mixture of red and black and because of this danger of darkness it is well to stay away from a shade of color approaching brown. Another happy change was the adopting of the Standard for Partridge females calling for penciling in the hackle feathers. The best penciled females have penciling in the hackle, and penciling is the first property of Partridge varieties.

Single Mating Is Today Possible

The beginner of today can get the benefit of the old breeders' labor of many years. There are many fine specimens in the yards of all well-known breeders of Partridge varieties, so the beginner can have the best to start with. Then the new Standard corrects many of the faulty ideals of the past which have been a handicap to all breeders.

In the past the Standard has called for a solid black stripe in the hackle and saddle of the Partridge male and where this has been continually practiced it has been at the expense of good penciling in the female. All breeders know that if you have a female with a well penciled back, she will be well penciled on wings, breast, body and fluff. The males from the best penciled females have a red shaft in the center of the hackle and saddle feathers. In times past these males have been cut quite severely for this red shaft; henceforth they should not be. Single mating is feasible with this kind of males, and double mating is not consistent with true progress with any Partridge variety.

The old Standard called for the same solid black stripe in the Partridge male as in the Dark Brown Leghorn male. The Brown Leghorn breeder has lumps of metallic black in his dark females to produce the black in his males, whereas the Partridge breeders have only narrow black penciling, and the best penciled females of the Partridge varieties are free from metallic. The solid black stripe cannot be bred with any degree of certainty with well penciled females. We Partridge breeders want that rich red shaft in the hackle and saddle feathers of our Partridge males, but we want it confined to the center of the feather and not at the base and the tip of the feather.

We must not forget several more important points in selecting our good breeding males. One of the most important yet most generally overlooked is to select a male with a broad feather in hackle, back and saddle. Another important thing is to see that he has plenty of red in outer edge of primaries, and still another thing of importance is that the fluff should be black, slightly tinged with red.

Now a word of caution: Do not select a male for a breeder that has a lemon-colored neck and saddle, for if you do, you are sure to pro-



PARTRIDGE ROCK

Courtesy of J. H. Webster, Hamburg, N. Y.

duce females of a clay color. Follow the Standard and select a male of medium rich, brilliant red, one that is from your best penciled female and you will be on the road to success with your Partridge Plymouth Rocks.

Partridge Rocks As Egg Producers

By J. H. WEBSTER, Hamburg, N. Y.

THE matter of egg production has been so much talked of and written about during the past few years that it has brought on the first stages of insanity with many poultry breeders and quite reached the second stages with some. Every conceivable natural and artificial means has been resorted to to increase egg production, from the feeding of all sorts of stimulating foods to the working of the hens from fifteen to eighteen hours per day by the use of electric lights—done for a small increase in egg production—and perhaps a record—but at the expense of the vitality of the flock. This we know to be true in a number of cases, and in other cases we have seen an increased production for a short time and then a complete cessation of production and at a time when the most might be looked for.

But returning to our subject, Partridge Rocks as egg producers, perhaps we would be presumptuous to compare Rocks with the Leghorn family which has no other duties to perform than to lay eggs. Nature has decreed that the Partridge Rock should propagate and rear their own kind, so that there is a certain period each year when the females feel the necessity of performing that duty. Without prompt action upon the part of the breeder much time may be lost by such broody hens when they should otherwise be producing eggs. But prompt action by the breeders will very quickly convert them from their broodiness to egg producers again.

Much to our regret, few Partridge Rocks have been entered in the great egg-laying contests, due perhaps to the few breeders and small flocks. However, they did win a couple of the National contests in 1910 and 1911, and it is to the discredit of breeders in general that they have not been more in evidence in such contests, that they might have given a greater account of themselves and at this time have been more prominent in public favor.

Eliminating the individual record of an occasional hen—which invariably was given every attention for the purpose—we believe that the Partridge Rocks are quite equal to any breed, and we know them to be equal to any breed of their class. In the make-up of the breed the Brown Leghorn and Golden Penciled Hamburg, two of the best laying breeds, were used, which qualities they have retained.

Little attention appears to have been given to individual records, though we have been informed of one trapnested hen producing 301 eggs in a year, and another case of one producing 212 in her first year and 210 in the second. Many cases are reported where they have commenced laying before six months old, and we have one case which would be quite equal to any breed: Six pullets in February, 1923, laid 149 eggs, and in the month of March laid 164. These six hens with eighteen of their own pullets, making a pen of twenty-four, during the month of January, 1924, laid 538 eggs and in February laid 571. This is quite as good as could be expected of any flock of this size during the months mentioned.

Partridge Rocks, if given the same attention and care that is usually accorded other breeds from which large egg production is looked for, will prove themselves among the very best egg producers.



PARTRIDGE ROCK

Courtesy of J. H. Webster, Hamburg, N. Y.

High and Low Tides in Partridge Rock History

By ROY ARMITAGE, Elizabeth, Ill.

Member Executive Committee International Partridge Rock Club
Breeder of "Joseph's Coat" Partridge Plymouth Rocks

THE Almighty has given mankind fowls of various types and colors. He has also given man the power to so intermingle these as to produce new and varied shapes and color schemes, in order that there may be a variety to suit every taste. Science tells us that all our present varieties descended from *Gallus bankivus* or the red jungle fowl of India, so that the beginning tide of all poultry dates back several hundred years to these ancient fowls. We breeders of Partridge colored fowls claim (breeders of Brown Leghorns or Black Breasted Red varieties may make the same claim) to be more closely allied with Nature's original colors than any other variety, since the Partridge color and the color of *Gallus bankivus* bear a striking resemblance. That is why the Partridge plumage (though its extreme beauty appears difficult) reproduces exceptionally true. It is Nature's color more than it is a creation of man. Thus the beginning tide of all our domestic poultry is especially dear to us breeders of Partridge varieties.

We must reverence in high esteem the names of Rev. Mr. Marsh, Jefferson Shaner, Philander Williams and Sherman Hartwell, who were among the first to advance the tide of Partridgedom in this country with their beautiful Partridge Cochins. Especially must we respect the Partridge Cochins of George W. Mitchell, who is held as an authority on this color by us younger breeders. "The line of curves is the line of beauty." Certainly Cochin type and Partridge color were a beautiful combination, but the feathered legs and toes were distasteful to many fanciers. This naturally led to another rise in the tide of Partridge color—the creation of a Partridge colored fowl without the feathered shanks. Here began the history of Partridge Wyandottes for the Rose Comb fanciers and Partridge Plymouth Rocks for the Single Comb fanciers. We shall confine this article to the latter and discuss various tides within the history of our own beloved variety.

Partridge Plymouth Rocks can trace their origin to a number of originators: Elmwood Farm, Weston, N. J.; Hill Crest Farm, Oxford, Pa.; Rock Hill Poultry Farm, Ossining, N. Y.; and Messrs. Kyle, Crocker, Buffington, Noftzger, George, etc. Some strains grew out of Partridge Wyandotte sports; others are crosses between Partridge Cochin, Dark Cornish and Golden Wyandotte; and some strains contain Brown Leghorn and Golden Penciled Hamburg blood. Perhaps none of these strains have been kept up in their purity but most of them have been intermingled so that we have the one grand Partridge Plymouth Rock, with the laying qualities of the Leghorn, the meat and vigor of the Game and the beauty of the Partridge Cochin—truly a wonderful creation! They were admitted to the Standard of Perfection in 1909 and then began a boom or tide in Partridge Rock history, the height of which has never been attained since by this variety. It was about this time that the author took up the breeding of Partridge Plymouth Rocks. I was just starting to breed Partridge Cochins when the announcement came of the creation and admittance to the Standard of Perfection of the clean-legged Partridge Plymouth Rocks, and this interested me to the extent that I began my career with this new variety. Thus it has been my

privilege to observe the rising and ebbing tides of this variety since that time, although I am a rather young fancier.

They tell us that a few days after the recent earthquake in Japan, perhaps due to a reaction caused by the quake, a very high tide and some of the largest waves ever known appeared in the harbor of New York. Ferry boats had to cease service for a time and bathers had heaps of fun floating over the waves. The above illustrates Partridge Rock history for a period shortly after their admittance to the Standard. Their sudden boom was the earthquake which shook the poultry world. The great waves represent the extreme height of popularity which they reached. The ferries which ceased to operate were the older breeds which were dropped or retarded in favor of Partridge Rocks. And the bathers who had the fun on the waves were the Partridge Rock breeders who enjoyed a prosperous trade at that time.

Yes, Partridge Rocks once enjoyed a great boom. There were full-page ads for them in many of the poultry journals. Articles were written boosting them. Expensive catalogs were issued. They even won an egg-laying contest, which helped their popularity. Everything seemed lovely and they were the coming fowl. But suddenly there was a crash! Perhaps this was due to bad financing or disagreement among breeders. Big ads were reduced and in some cases stopped entirely. Some breeders went out of business. Classes were smaller at the shows. It was a great reaction after the big noise. Such spurts are injurious to any cause. However, they have some good points. They are like a revival meeting in a church. We all prefer a person who decides to live a better life by reasoning it out for himself that such a life would be better, in preference to the convert who is won entirely through emotionalism. However, some converts are gained and held through emotionalism that would have been gotten in no other way. The same way with a poultry boom. Breeders took up and still continue Partridge Rocks who perhaps would never have bred them otherwise. And I am in possession of a de luxe catalog which one of these prominent breeders gave me at the time the Partridge Rocks were in their glory. Although he has since quit the business, his efforts were not in vain, for in that catalog was an expensive color plate reproduction of Partridge Rocks in natural colors. I have never seen one like it since and it will perhaps be a long time before we have another breeder with the cash to promote such an expensive picture, and I treasure very highly this work of art.

But even though this "noise" had its good points, we all admire the old horse that plugs along steadily in preference to the one that goes in jerks. It would have been far better for the Partridge Rocks could they have advanced gradually. But it was not the fault of the variety that they sank to such a low tide. We breeders were all to blame, for a breed will be advanced in proportion to the amount of enthusiasm we put into it.

"You can't keep a good man down" or "truth crushed to earth shall rise again." During all this period of depression, Partridge Rocks kept right on shelling out the eggs, growing luscious table meat and shining in gorgeous beauty so that fanciers are being compelled to recognize their merits once more. Their own good qualities are bringing them to the front without the aid of a wealthy publicity campaign. They are succeeding on their merits. Farmers are breeding them because they are proving themselves unsurpassed as layers and meat producers. Their beauty is attracting the fancier. Back-lot poultrymen are finding them to be the ideal fowl in confinement. Classes are increasing at the shows.

We have a real, live club that is growing. Our secretary is a great leader. The Partridge Rock tide of the present is rising slowly but steadily on a foundation which cannot fail, namely, Their Merits!

I predict a future tide wherein we shall see Partridge Rocks elevated to a height equal to the tide of ten years ago. However, it will not be attained with mushroom speed but will be built up round by round. They will be as common in the farm flocks as the old reliable Barred Rock. We shall hear of them ranking high in every egg-laying contest. Our club will be large and strong with a fully equipped service of literature, books, pictures, ribbons, etc. The poultry journals will be full of ads and articles. Competition at the shows will be keen and, while we all admire the clean sweep records made by Thompson's "Ringlet" Barred Rocks, may there never come such a time or leader in Partridge Rocks. We want so many breeders to have the best that no one breeder can carry away all the honors. Such a high tide in the career of our variety can be attained and maintained only when each of us, no matter how small a breeder he is, exerts his share of enthusiasm for the breed.

Of course wars, panics, etc., lower the tide of any business and our variety would suffer under such conditions. There will no doubt come times when there will be dissension among breeders regarding color of male, or color of female; striping or penciling of female hackle; male wing bows same shade of red as the back, hackle and saddle; leg color etc. Such confusion is detrimental to the high tide of any breed. But if such a time ever comes in the history of Partridge Plymouth Rocks, may we heed the lesson taught us by the beautiful blending colors of their plumage—that to be at their best in beauty, the colors must be in **harmony**. Harmony within the ranks of Partridge Rock breeders at all times will do more than all else to keep this splendid fowl at high tide.

Partridge Rocks

By G. L. SEVERS, Taylor Ridge, Ill.

I FEEL very much gratified in being permitted to say a few words through this volume in regard to Partridge Rocks and their possibilities. In order that we may fully understand the subject, it is necessary to look into the building up of this most remarkable breed. There seems to be no single person entirely responsible for bringing this beautiful specimen to its present usefulness.

It does not seem to be a hard matter to combine solid colors and produce another solid color, but when men can with patience running 10 to 15 years build from so many different breeds the wonderful colors contained in the plumage of the Partridge Rocks, it seems to me almost miraculous. The plumage is not the only remarkable thing about this beautiful bird. One of the most prominent qualities is the Rock shape. This, too, being brought about by the mingling of many shapes and sizes, is also one of the wonders of the poultry world.

I shall not take the time or space to go into details and name the men who by their perseverance have given to the world not only one of the best but I believe the best domestic fowl the world has ever produced. About 25 years ago men in the eastern part of this country conceived the idea of creating a more beautiful Rock color covering the perfect Rock shape. They had for their ideal color the Partridge Cochin and using this as the basis and by using the Brown Leghorn as the first cross, later the Golden Penciled Wyandottes and again mingling the

hardy Indian Games, the quality of the Golden Penciled Hamburg later being introduced, at last the beautiful color of the Partridge Cochins was transferred to a fowl that had the true Rock shape and thus today they have almost completed one of the most difficult feats of modern science.

While this was going on in the east, the western fancier was not idle. The same idea had been working in the minds of these hardy sons of the west. They, too, wanted to maintain the Rock shape which is admitted by all to be the nearest to perfection possible to be obtained. So we find these men, practically at the same time, taking the Partridge Cochins as the basis and crossing and re-crossing Golden Wyandottes and Indian Games until they, too, had produced a similar color and shape, identical as it were and neither of them at the beginning knew of the aims of the others. Thus we see that through the determination of these men, through their failures and later their success, a fowl was brought into existence that has at last been given its place in the sun and is reared in all parts of the world.

Now as to the possibilities. This phase of the breed remains in the hands of the breeders and this question can only be answered by them and as I am one of the breeders I shall proceed to give my readers my opinion. A long time ago some one said it pays to advertise. This statement has never been refuted. In all the business world this fact has been and is so firmly established that billions of dollars are spent annually for this purpose. If the Partridge Rock breeders will follow the simple lines of business and advertise, push and not pull, the avenue is open for one of the most wonderful developments of this truly wonderful fowl. I do not feel that I am boasting when I say that in the future years this fowl will be known by nearly every poultry breeder as the best all-around meat and egg producer as well as the most beautiful fowl in the poultry world.

The International Partridge Rock Club is under the leadership of J. H. Webster of 903 Chamber of Commerce, Buffalo, New York, who is the secretary. He will be only too glad to enroll you as a member and working with him and your club the possibilities of the Partridge Rocks are unlimited. Join the club; it is yours.

Success With Partridge Rocks

By MRS. LEWIS OTTO, Millington, Ill.

FOR years I raised just chickens but there wasn't much money in it and surely no glory, so I decided to raise purebred stock. As I had always admired the Partridge Rocks for their beauty and I was sure they must be good chickens for I had raised Barred and White Rocks, I sent for eggs from good purebred stock and raised a nice little flock of Partridge Rock pullets for the next season. Since then I have had a wonderful flock and they are admired by everyone who sees them.

I have always admired the Partridge Rocks more than any other breed of poultry. I don't know whether it is their artistic colors and beauty which influence me or their general qualifications as an all-round fowl. I have raised many different breeds of poultry and I find that none beat the Partridge Rocks. They take their place for the fancier, the farmer or the small back-yard breeder. A combination of all good qualities is in this one breed.

They are surely a beautiful bird. In color they are the beautiful rich

partridge color with brilliant black and rich red plumage of the male and the reddish bay penciling on the black background of the females.

They lay and pay, for they surely fill the egg basket and are especially good winter layers. As they are a new breed they are very strong and healthy, and I find that they mature very quickly and the young feather out fine. I have never had one going around featherless as birds of some breeds do until nearly grown.

They are the all-purpose fowl; for the table they cannot be beat, either for friers or broilers, roast or for a good chicken soup. They have the true Rock shape, yellow skin and plump bodies.

They are also good sitters and mothers, and will sit wherever you tell them to. Mine do anyway, but they are real tame and when they become broody I move them in another building and put them on the nest of eggs at night and very seldom have any trouble with them.

I have had very good success with my Partridge Rocks, and sell all their eggs for hatching in season, and I take lots of pains to mate my flock so the eggs are fertile. I also feed to produce fertile eggs.

You must take good care of your poultry, dear readers, if you want them to pay off the mortgage. You must fight lice and mites all the time for if your chickens are full of these parasites they cannot thrive.

Be sure your chickens always have plenty of clean water to drink.

Partridge Rocks and Their Possibilities

By J. H. WEBSTER, Hamburg, N. Y.

THE possibilities of the Partridge Rocks can truthfully be said to be equal to that of any other breed of fowl and greater than that of many. Partridge Rocks were admitted to the Standard of Perfection in 1909, at which time they were comparatively unknown and being bred by but few persons, most of whom were considered to be purely fanciers. Their colors and penciling are very beautiful and attractive indeed but this caused many persons to believe that they would be too difficult to breed true to feather and other Standard requirements. Not receiving the necessary publicity to properly promote a new breed, their progress was slow. They were obliged to make their own way by making a friend of everyone taking them up and continually making a few new ones each year through their most excellent qualities until they have reached a point of popularity equal to or even greater than many of the much older breeds. Fear of not breeding true has been eliminated from the minds of most people since it is found that some of the very best birds are produced from single mating.

While Partridge Rocks were originated by fanciers—as all breeds are—and formerly considered only a fancier's breed, the fact that they were made up of the very best meat-producing and egg-laying breeds, both qualifications which they have retained, makes them a farmer's or general-purpose fowl second to no other breed. The chicks are hardy and rapid growers and make most excellent broilers and fryers at an early age. Their clean, yellow legs, yellow skin and plump bodies make them a very attractive market fowl, and as a table fowl they are unexcelled. Pullets frequently commence laying at six months of age and are excellent layers at all seasons, filling every requirement that can justly be asked of a domestic fowl.

While their growth in public favor has been slow up to 1922, during

that year breeders began to demonstrate greater interest in them and bring them to public attention. Birds began to appear at fairs and shows where none had ever before been exhibited. Hundreds of persons were attracted to them, many of whom soon became new breeders. A limited amount of advertising further increased the demand for them until at this time, 1924, most breeders are taxed to the limit to supply the demands made upon them.

Partridge Rocks, the fowl with every good quality, have every possibility of very soon becoming one of the most popular breeds of domestic fowl.



Mating and Breeding Columbian Plymouth Rocks

By T. J. ENSLIN, Hackettstown, N. J.

I TRUST the reader will not think I am assuming too much in treating on this important subject, in view of the fact that my experience does not cover as long a period of time as that of many Light Brahma breeders, although I have been breeding Columbian Rocks for sixteen years. It is a well known fact that for fifty years some of the best poultrymen in the country have "jarred their brains," so to speak, in endeavoring to produce A-1 Light Brahma specimens.

As regards color markings the same principles apply for Columbian Plymouth Rocks, as they are identical.

However, I can assure the beginner that many Columbian Rock breeders have obtained marvelous results within a very short period, principally due to the injection of well established Light Brahma blood—which required a White Rock cross to give it a good foundation.

Unlike some breeds, it is not necessary to resort to double mating to obtain best results. Single matings will answer every requirement.

Type

Unless a specimen has fairly good Rock type, viz., long body, broad breast, with legs, neck and tail to conform, it is useless to breed the same. Most breeders understand so thoroughly what is required as regards type that I will not take up your time in connection with this feature, but will devote myself almost entirely to color markings.

I might say, however, that the type of the female has a greater influence on the offspring than male does; consequently the female end of the mating should receive careful attention in this respect.

Hackle

To my mind there is nothing so beautiful in the makeup of a Columbian Rock as a well defined, distinctly marked hackle, with feathers having broad black centers, edged off with the narrow white stripe. The hackle seems to outshine all parts of the body and naturally should have the most consideration. I do not know of any other section of the body which implies or has so much meaning; consequently every effort should be made to produce good hackles. The black markings should be carried well up to the head, and should meet in front. I have heard many judges say that unless the hackle is at least fairly good they would not go to the trouble to take the bird out of the exhibition coop for closer examination. A smutty or smoky hackle is one of the hardest if not the hardest defect to outbreed, but it can be done by line breeding two or three generations on A-1 hackled specimens. A tendency today is to have the white stripe in female hackle feathers too wide. The narrow stripe in my judgment is the ideal.

Tail and Saddle of Male

The main tail feathers in both male and female should be solid black, also sickle feathers of male. The tail coverts of both male and female constitute one of the most important as well as most beautiful sections of the color markings. The male tail coverts should have the greenish



COLUMBIAN PLYMOUTH ROCK COCKEREL, FIRST PRIZE
CHAMPION MALE, MADISON SQUARE GARDEN SHOW NY
JANUARY 1920.
BRED AND OWNED BY
HENRY L. WILBUR TIVERTON R.I.

black center in web, edged off with narrow white stripe, giving it the appearance of a highly polished feather. Female tail coverts should have solid black centers edged off with narrow white stripe.

Saddle in Male

The question of saddle striping in male has been a bone of contention for many years. The 1915 Standard of Perfection for male says: "Saddle, white except feathers covering root and sides of tail, which should be white, with a narrow V-shaped black stripe at end of each feather, tapering to a point near its lower extremity." I do not wish to criticize, but I do think the description of saddle should be more explicit both as to color of feather and amount of striping. My experience has been that if a saddle feather does not show a distinct black and white or clear white between fluff of feather and the V-shaped black stripe, there will exist in its place a smutty or smoky color in that portion of feather. This off-coloring always accompanies foreign color in surface of feathers in the back, and as a rule reproduces itself in the offspring. Some breeders have an idea that saddle striping produces foreign surface color in back of female. This is not true, although I have known of many cases where a superfluous amount of saddle striping will produce this effect in the offspring.

The amount of saddle striping is another point on which many judges disagree. It is a mistake to have all saddle feathers striped. About one-half or at the most two-thirds of feathers adjoining tail coverts is sufficient. When all saddle feathers are striped it always accompanies an undesirable surface color in fluff, and outcroppings of black in breast either some distance below or immediately adjoining front of hackle. The Standard fails to make a distinction between different parts of undercolor of saddle feathers. Although the main part of undercolor should be bluish-slate, it is no detriment to the bird if white undercolor exists for a distance of about one inch from base or quill of feather.

Wing Feathers

Primaries should be black, except a narrow white stripe on the narrow side of shaft of web. Secondaries should have a much wider white stripe in same portion of feather. Too much stress is laid on wing points. Good wings will not control hackle, saddle or tail feathers.

General Undercolor

The Standard calls for "bluish-slate" for all parts of body except breast, where "bluish-white" is called for. In mating up, discrimination should be used and surface coloring favored over both undercolor and hidden parts, notwithstanding fact that good undercolor is very essential.

General Color Markings

To produce the ideal Columbian Rock all parts of the specimen must harmonize. A very dark bird generally runs dark in all sections including undercolor. The inclination today is to have them too dark, especially the male, in order to bring out the distinct black and white. This is overdone by some breeders much to the detriment of our breed. It is a mistake to breed the so-called "dark bird" having slate surface color in fluff and a superfluous outcropping of black in surface of breast near hackle and in surface of back near hackle, in order to have a perfect bird in other respects. Such a condition produces anything but a beautiful bird. I do not agree with some breeders, viz., that the birds in the breeding pens should have stronger color markings than that which you



FIRST PRIZE COLUMBIAN ROCK HEN AT
BOSTON SHOW 1920-21 BRED AND OWNED BY
HENRY L. WILBUR TIVERTON R.I.

may desire to produce in the offspring. The Standard calls for white surface color in breast, back and fluff, and to my idea it is this beautiful white, contrasted with black in hackle, tail and saddle in male and hackle and tail in female, which gave the Light Brahma unparalleled popularity in the past fifty years. "Breed as you exhibit and exhibit as you breed" is the best method. Many breeders claim the breeding male bird should be strong in color, viz., stronger than the Standard calls for, claiming he has a predominating influence in color of offspring. Experience has taught me that this is true, providing the females are light in color, in which event, however, the offspring will not be a uniform lot of birds. Uniformity cannot be obtained by a union of two extremes. If the females mated to such a specimen are strong in color, the offspring will be more uniform, but will run too dark and it is from this source that we obtain the so-called undesirable "dark bird." Better results are obtained by mating a male that is nearest the Standard to females light in color (if you have no Standard colored females), and then mate offspring back to male bird, in other words, line breed on the male end.

Brassiness in males is generally the result of lack of strong color markings in the parent male and can easily be outbred.

One of the hardest defects to overcome is the appearance of gray in sickle feathers. However, since saddle striping has reached a high state of development in the past few years, this defect has not been so prevalent.

Side Sprigs and Stubs

Both of the above have caused considerable annoyance in past years, on account of the Columbian Rock originating from a Light Brahma cross which have pea combs and feathered legs. These defects are now easily outbred by judicious selection of clean single combs and smooth-legged birds for breeders.

Mating Columbian Plymouth Rocks for Color

By W. M. ALLEN, Box 373, New Bedford, Mass.

THERE has been so much written concerning the proper mating of poultry, for obtaining the surest and best results in color improvement that we feel a little backward in making public the methods we employ in mating our own Columbians. We are not intending to try to convince you that this is the only right way; we are only offering this as a suggestion, you, of course, to be the judge as to whether or not this is worth a try-out with your own flock.

In this section there are many people having flocks of poultry for the purpose of supplying their table with eggs and chickens. Perhaps your section is the same. In a great many instances these people started with any old kind of stock, and for a while they seem satisfied. Then they get acquainted with someone who has a more uniform flock, or perhaps go to some poultry show and see some really good birds. The seed of dissatisfaction is sown, and they begin trying to find out how to improve their stock without spending too much money, or perhaps selling out and starting all over again.

Now if you happen to be one of those, have Columbian Rocks, and are anxious to improve your color and markings, we would suggest you try the following method of mating.

In the first place, if you are not thoroughly familiar with the

Standard of Perfection, get a copy and become familiar with the requirements of the Columbian Rocks. It is absolutely necessary that you breed to the Standard and not to your own ideas if you want to improve your flock so as to be able to enter the shows and have an equal chance of winning in competition.

We think the most important thing to consider in selecting your breeders is the type; therefore, fix the Plymouth Rock type in your mind so firmly that you can tell at a glance whether the bird you see has the Rock type or, as is too often the case, shows too much Wyandotte. Some breeders have introduced Columbian Wyandottes into their flocks of Rocks to improve the color, but we think that a mistake. There is no doubt they can improve the color, but they sacrifice the most important of all, TYPE. So we would select as breeders females strong in type, regardless of markings. Some day when your birds are out on the ground, select all the best typed females, and if convenient put them in a house by themselves; then some evening when they are on the roost, go out and go over each bird separately; select those conforming nearest to Standard for color, and keep them separate. Then go over those remaining, making a second choice. Those that are left can go into another pen; if you separate as suggested you will then have three pens of females from which you can breed at once. We will call the best females you have Pen 1; second choice, Pen 2; those remaining, Pen 3. All these birds have good type, and Pen 1 has best color markings. Now for a male bird for Pen 1 we would suggest you purchase from some reliable breeder a male of exhibition quality, and insist that this male came from a female of known ability as a layer. In this way you not only will improve the color, but you stand a chance of improving the laying qualities of your flock. The purchase of this one male bird is the only expense you need have. For Pens 2 and 3, we would choose males from our own stock, selecting males strong in sections where females are weak. When we say strong, we do not mean go to extremes. We mean moderately strong. You may think that using your own males on Pens 2 and 3 is not right, but if you select males as suggested, and particularly of good type, you will find a decided improvement of type and color from these matings. The chicks raised from Pen 1 will, we think, be so much ahead of any you previously had that you will feel more than satisfied for the expenditure for the new male bird.

The following season, select females from the young of Pen 1, just as you did last year, and mate them back to the head of Pen 1 of last year. In selecting females this time, be particular; pick out the best only, even though you only have five or six females in the pen. Now select the best cockerel and mate him to the best of the females that were in Pen 1 of last year. You may also select cockerels from Pen 1 to head your Pens 2 and 3 this year. The following season repeat the same process you did from your old Pen 1.

Now you have made the first step in line breeding. By keeping records and toe punching your chickens, you will be able to tell at any time the parentage of any bird on the place, and thereby be able to mate in the future so as to know with some degree of accuracy what to expect from your matings. If you are not familiar with the method of line breeding, we think a request to Poultry Breeders Publishing Company, Waverly, Iowa, for a chart on line breeding, will be gladly complied with.

We feel confident that, if the foregoing suggestions are followed, in a short time you will have a flock of Columbians that will make some of the old-timers hustle to beat them.

Columbian Plymouth Rocks for the Back-Lotter

By W. E. CRAIG KENNEDY, Lawrence, Kansas

IF IT were not for the fact that the full and most appropriate title for this article would be too long, I would have headed it as follows: "Columbian Plymouth Rocks for the Back-Lotter, Fancier, Farmer, and Everybody Else That Loves Poultry." Those of us who breed Columbian Plymouth Rocks will not knowingly take our hats off to any breeder of any other variety of Plymouth Rocks, nor to any other breed of fowls when it comes to the two essentials in poultry, viz., profit and pleasure.

Inasmuch as it was the item of pleasure that first attracted me to poultry, I'm going to dwell upon that item first. First of all, if pleasure be your desire, I know that beauty will be one of the first essentials. It is but natural that tastes for beauty differ. If it were not so, it is quite evident that we would have very little variety. Be that as it may, however, what is more beautiful than striking contrasts? What colors lend themselves to more striking contrasts than black and white? Other colors if contrasted are not so distinct and more easily blend themselves into backgrounds, and if the backgrounds happen to be nature, such as fields of green, shrubbery or plowed ground, colors other than black and white are very apt to be hidden.

The Columbian Plymouth Rock is a white fowl with very striking black striped feathers on the hackle and tail. The white stands out in bold relief on any background except snow, and when the background is snow, the black striped feathers, decorating the bird both fore and aft, predominate. So whether the Columbian is foraging on fields of green or on fields of golden stubble, in forest's dale or amid the falling autumn leaves, their outline is still distinct and cannot be hidden from view.

The next essential in point of beauty would probably be symmetry. Here again tastes may differ, but for me and for all Plymouth Rock breeders of whatever variety, the shapely outline of the Rock family could not be improved. How gracefully the head sits on its beautiful neck! Its body is neither too long nor too short, but just right. The tail is carried at a proud, but not vainglorious angle, and the body is most fittingly and properly carried on two stalwart legs.

But if beauty of color and symmetry of carriage were the only attributes of the Columbian Plymouth Rocks, the back-lotter, fancier and farmer might soon get tired praising them. Fortunately, however, the Columbian Plymouth Rock only starts with beauty. Next comes profit, and it makes no difference the season of the year, you'll find profit in Columbian Plymouth Rocks. They are prolific layers of well shaped, light brown eggs of good weight. Intelligent care and attention such as would naturally be expected by any self-respecting fowl will produce for you as good a flock average as can be gotten from any other breed. Of course you'll also find exceptional layers with high records.

But eggs are not the only thing. After a Columbian Plymouth Rock has served her days in laying eggs, she is still able to provide a plump carcass for your table. There is no fowl in the poultry kingdom that will supply a more tasty or delicious flavor. Go through the whole category, from broilers, springs, roasters or capons, and on the table or market your Columbians will satisfy. They don't only satisfy the

most discriminating in taste, but also in appearance, because their plump bodies are covered with a nice yellow skin, without showing any objectionable, off-color pin feathers.

For beauty, for profit, for pleasure—Columbian Plymouth Rocks are best for the back-lotter, the fancier, the farmer, the commercial poultryman. They satisfy.

Columbian Rocks—Eggs and Meat

By C. C. NOURSE, New Bedford, Mass.

THE prospective breeder of Columbian Rocks will not go wrong if his choice rests with this breed, after he has become exhausted and bewildered trying to select the best twin-purpose fowl. Their merits so fully overlap their weaknesses that the breeder does not hesitate to bare them.

Over-fat is the principal fault and, of course, is characteristic of all Rocks, especially those that are confined to the house during the winter months. This can easily be prevented by handling your birds often, making them work hard in deep litter for the grain, cutting down the corn in the scratch and substituting wheat, if their weight is increasing too rapidly. Over-fat retards laying and is the cause of an egg-bound condition and kindred ailments.

In the writer's opinion, the commercial scratch contains too much corn for the Rock family, and it is perfectly safe to add a third, or about thirty pounds, of wheat to each bag of scratch. Any of the good commercial laying mashers contain enough corn meal to balance the substitution of wheat in the scratch.

Persistent broody hens will develop. By breeding from those that become broody the least often, or never, in their pullet year, this weakness will soon become a rarity.

This closes the bad side of the ledger against the Columbian Rocks.

As layers, they compare with any average flock, and if the trap nest is worked on them and culling exercised, with the Standard always in your mind, one can develop a flock equal to any, as the many laying contests have proven.

The natural ruggedness of Columbian Rocks, linked with the breeds of their origin, allows them to stand up well under forced feeding for eggs and come through in fine condition in the spring, with something on their bones besides skin.

All authorities seem to agree that the Rock for eating is just a little out in front of the best, and the Columbian, of course, is no exception. "Superdelicious" is a little short in attempting to explain or describe the flavor of Columbian Rock meat.

As chickens they respond quickly to good care, make attractive fries and broilers and draw a premium over other breeds in most markets.

They are hardy and withstand cold and damp winters. The writer has had only one case of cold in four years in his flock, and that was contracted in a poultry show.

In closing, the Columbian Rock is a fine layer and supreme as a table bird. It is strictly up to the individual owner whether he wishes a flock that is pleasing to his eye, his palate, and his purse—or just a bunch of chickens.

Rose Comb Barred Rocks



The **Rose Comb Barred Plymouth Rock** was bred as early as 1886, but until 1911 no effort was made to develop it as a Standard variety. Every year since that date birds have been bred and exhibited with the purpose of bringing them up to Standard requirements.

In August, 1914, a few breeders met at Hotel Sherman, Chicago, and organized the American Rose Comb Barred Plymouth Rock Club. S. B. Wenger of South English, Iowa, was elected president, Geo. Carpenter of Des Moines, Iowa, vice president, and G. W. Lightner of St. John's, Kan., secretary-treasurer. The club at once paid for a life membership in the A. P. A.

Many have fancied the Rose Comb and have recognized that it is more suitable than the Single Comb for cold climates. Because of these facts the club has deemed it a duty as well as a privilege to prepare a Standard for the variety. Hence this production. We advise its careful study and the judicious breeding of the Rose Comb Barred Rock. We recommend the variety as the best all-purpose fowl for all climates.

Vitamins—Vital Factors in Poultry Feeding

By A. F. ROLF, Poultry Service and Research,
Box 13, North End Station
Detroit, Mich.

WITHIN the past year or two poultry raisers have found a new term—vitamins—appearing in their reading matter with increasing frequency. The vague, yet technical, discussions of these recently discovered factors have been somewhat confusing and many misconceptions have been formed as regards their properties and functions. Vitamins are, in a few words, vital factors of foods without which growth, maintenance of health and reproduction are impossible.

We know now that it is not enough to have a proper mixture of proteins, carbohydrates, fats and minerals, but that it is also necessary that the essential vitamins be present to enable the chicken to make proper use of its feed.

Nature provided a sufficient source of vitamin for wild animals and birds as long as they were living and functioning under natural conditions. The modern chicken is very unlike the wild chicken and it no longer lives or functions under similar conditions. Its size and rate of production have been vastly increased through wholly artificial methods of feeding, housing and breeding. We can, therefore, no longer say that Nature's method is an ideal method for the poultry raiser.

Artificial Feeding

With the gradual development of the chicken from its original wild form to its present highly efficient form, we learned through experience and research a great deal about feeding problems. We found that whole seeds and grains were not sufficient and we gradually came to the accepted practice of using mashes composed of ground grains or portions of grains supplemented by such protein concentrates as meat scrap.

Fortunately, nearly all of the feed stuffs used contain more or less vitamins. The vitamin content of the rations which have come to be generally accepted as satisfactory has been sufficient in most cases to generally prevent any of the specific deficiency diseases. Whether or not they have possessed sufficient vitamins to produce best possible results is another question and one which would seem to have been partially overlooked by our investigators up to the present time.

It is natural after many years' experience with poultry raising for one to consider as "normal" or satisfactory development similar to the best conditions previously observed but this is by no means any indication that we cannot in the future, with the aid of new knowledge, attain even better results than have previously been known.

The deficiency diseases have furnished vivid evidences of results of an extreme vitamin deficiency, but such diseases are "end results" and we are now learning that it is possible to have sufficient vitamin present either to indefinitely postpone the appearance of the deficiency disease, or even to totally prevent it, and yet at the same time not have sufficient vitamin supply to insure the best possible results.

Some poultry raisers have felt that our present modification of Nature's system of feeding has been largely a matter of providing larger quantities of various classes of feed stuffs. Such has not been the case, however.

The use of meat scrap has been referred to as providing large

quantities of material comparable to bugs, worms and small animals furnished by Nature. Meat scrap may be comparable to these foods from a standpoint of protein, carbohydrates and fat, but it is not comparable from a vitamin standpoint. Practically all of the vitamins in animal flesh are confined to the glandular organs such as the liver, heart, brain, etc. Most of these organs are used for human food and commercial meat scrap consists largely of muscle tissues, which are nearly if not completely devoid of vitamins. The use of meat scrap therefore lowers the vitamin balance of our feed mixtures when compared to Nature's provisions. Corn meal, another common poultry food, is to a great extent manufactured from degerminated corn, the germs having been removed from the kernels for the production of corn oil. Here again we find the vitamin content of corn or any other grain is confined almost wholly to the embryo or germ. The average corn meal, therefore, represents a lower vitamin balance than does a natural food stuff.

We might continue to discuss and find similar upset vitamin balances in many of the other feed stuffs used for poultry. This should lead us therefore to a more careful consideration of vitamins and their relation to more profitable production.

Kinds of Vitamins

There are now four generally recognized vitamins known as Vitamin A, Vitamin B, Vitamin C and Vitamin D. The last named is usually found in connection with the first and since our present knowledge is insufficient to determine a definite line of cleavage between the two, they will be briefly discussed as one group in this paper.

A total absence, or extreme deficiency, of any of these vitamins results in specific diseases, as for example, an absence of A and D causes rickets and eye diseases; an absence of B causes polyneuritis and nutritional disorders; an absence of C causes scurvy. It should be remembered, however, that it is the least observable, yet serious, results of a less extensive deficiency of these vitamins in which the poultry raiser is most interested.

It is now generally believed that Vitamin C is not necessary for chickens since they are not subject to scorbutic diseases (such as scurvy). The writer sees, however, a strong possibility that certain common poultry ailments may be associated with seasonable deficiencies of C Vitamin. Until this is proven or disproven by careful research, we know of no necessity for C Vitamin in poultry rations, or at least none beyond what is certain to be present in any ordinary ration, especially when tender greens are occasionally provided.

There is a definite need of Vitamins A and D in the poultry ration. These vitamins are present in many of the common poultry feeds and in some of the young plant life usually available to the chickens. The chicken is able to store reserves of these vitamins in its functioning tissues whenever the food supplies more than is necessary for immediate work and to draw on these reserves later on when the food supply may not provide a full sufficiency.

It would seem now that the only time we need expect any need of a supplementary source of A Vitamin would be during the first few weeks of the life of the chick. Cod liver oil has been received very favorably by large numbers of poultry raisers for this purpose, although there are many other possible sources, some of which may eventually be found better adapted to the poultry ration.

The B Vitamin is found in nearly every foodstuff used in a poultry

ration and is considered by leading authorities to be the most important vitamin in poultry requirements. One reason for this lies in the fact that the chicken is not able to store any reserve supply of B Vitamin in its body and it becomes therefore vitally important that an ample source of this vitamin be provided in every day's ration.

In spite of the fact that this vitamin is present in practically every poultry food, it now seems that there is more often a lack of sufficient supply of B Vitamin in poultry rations than is the case with any of the others.

This B Vitamin promotes appetite and aids in the digestion of foodstuffs, making it possible for the chicken to consume and assimilate more feed for conversion into increased body weight or egg production, and at the same time maintain good physical condition.

The Use of Vitamins

Vitamins as a single material or article will probably never be available for use. As a matter of fact, scientists do not yet know exactly what the vitamin itself is because they have not been able to isolate it for study. (This latter statement may need slight modification by the time this appears in print, as only this week's newspaper reports credit a Columbia University scientist with having isolated one of the vitamins, but this report has not yet been confirmed and may later be found incorrect, as in the case of previous reports.) Scientists know only of the vitamins through their action when furnished in various vitamin-bearing preparations. This has been sufficient to prove the vital necessity of the vitamins and to indicate some of the results which are associated with a sufficiency or a lack of these factors.

It should be definitely understood that vitamins are not miracle workers, nor can they take the place of any other food elements. They might well be termed "activators" which make it possible for the chicken to use the other food elements. In this respect, they might well be compared to the action of electric energy as applied to the telephone. One may have the necessary receiver and transmitter, the wires, central switchboard and all other necessary items, but without the action of electric energy the transmission of conversation is an impossibility. We do not see the electricity, neither do we feel it, but we know from experience that it is what makes possible the operation of the whole system.

So it is with the vitamins. They make possible the efficient functioning of the entire system of the chicken when all other necessary elements are provided.

We can, therefore, only insure a vitamin sufficiency by the use of ingredients which are known to be particularly rich in vitamins, using them to so supplement the average rations as to prevent any possible deficiency.

Scientists state that no harm can result from the feeding of an excess amount of vitamins, therefore, until we know a great deal more about this subject we can only make sure that there is an ample supply of vitamin-bearing material in all rations.

There has probably been more work done in this country with yeast as a vitamin carrier than with any other single ingredient. Yeast has been of greatest interest to the poultry raiser because it is the best available source of B Vitamin in high potency.

Results from the use of yeast have sometimes appeared to vary so greatly as to cause some doubt whether the most beneficial results were really due to the yeast and its B Vitamin content. This has un-

doubtedly been due to a failure to appreciate the extent to which various flocks of chickens vary in regard to certain fundamental principles governing actions of vitamins.

It has been definitely proven that a vitamin insufficiency during the prenatal and growing period can never wholly be made good in later life. The prenatal period of animals corresponds to the incubation period of the eggs and during which time the chicken developing from the embryo is wholly dependent upon the vitamin supply stored in the egg by the hen. It has also been proven that the vitamin potency of the egg depends upon the vitamin content of the feed given to the hen producing the egg. Hens receiving rations high in vitamin content produce eggs high in vitamin content; those receiving rations low in vitamin content produce eggs similarly low in vitamin content.

It may be readily seen, therefore, that chicks hatched from eggs produced by hens receiving an insufficient supply of vitamins in their rations are hatched under a handicap which they can never wholly overcome. Since there is naturally a greater vitamin supply available to the hen during what we term the natural breeding season, it may readily be seen that chicks hatched very early in the year or very late in the year will not be able to respond to vitamin feeding later in life to as great an extent as those hatched in the height of the breeding season.

Another factor which undoubtedly explains some of the variation in results obtained from the use of yeast is that the term "yeast" has been generally accepted as a specific term describing a uniform material. There are, however, more different kinds of yeast than there are breeds of chickens or kinds of feeds and one might as well try to compare the result of "feed" in a case where corn meal was used with a case where meat scrap was used as to compare the results obtained from some of the different yeasts.

Probably the greatest single factor affecting the action of yeast has been that of fermentation. Wherever live yeast has been used, fermentation has taken place. Fermentation is simply the destruction of certain starches and sugars and their conversion into alcohol and carbonic acid (CO_2) gas. It is a self-evident fact that the CO_2 gas developed is of no food value and it would require quite a stretch of imagination to conceive of the alcohol produced being of value equal to the starches and sugars destroyed. There are also many possible conditions which would prevent the bird from eliminating an excess amount of CO_2 and its accumulation in such cases would result in gastrointestinal disturbances sufficient to more than offset any beneficial effects.

It would seem, therefore, that where live yeast has been used and beneficial results have been obtained, this would show that the B Vitamin provided by the yeast was sufficiently valuable to more than offset the loss through the destruction of the starch and sugar.

It has been further shown that when the life of the yeast cell is destroyed the digestibility of the yeast protein and organic matter is greatly increased. The vitamin content being locked up with the organic matter means that the vitamin content also would be more available. Two German investigators, Schill and Voeltz, who have probably given more attention to this phase of the subject than any other investigators, emphatically conclude as a result of their work that yeast should never be fed in the living state as far as food value is concerned, although it may occasionally be desirable to use very small quantities for medicinal purposes.

Practical Application

After a careful study of the vitamin situation, the writer offers the following suggestions for the practical application of our vitamin knowledge:

Breeding hens should receive rations particularly rich in Vitamin B in order to insure a production of vitamin-rich eggs, which in turn would take care of the prenatal requirements of the chicks hatched therefrom. These vitamin-rich rations can best be insured by the addition to the mash of small quantities of dried yeast (preferably one not containing live yeast cells).

The addition of this yeast to the rations of the breeding hens may or may not increase the number of eggs produced, but it serves its chief purpose in the production of better chicks.

Young chicks from the time of their first feeding should also receive vitamin-rich rations. Here again, the Vitamin B requirements can best be met by the use of dried yeast, and it should be furnished throughout the entire growing period.

It may also be highly desirable to include a small amount of cod liver oil as a source of A and D Vitamins during the first few weeks, or until the chicks are able to get outside and obtain sufficient supplies of these vitamins from natural food stuffs.

Poultry raisers who have made comparative tests between uniform flocks of chickens, part of which received yeast and part did not, report so-called "normal development" from the chicks not receiving yeast, but that those chicks receiving yeast in addition have shown much more rapid growth, increased size, quicker and more uniform feathering, earlier maturity and many other evidences of greater vigor and vitality.

It may be well to repeat at this point that vitamins are not miracle workers; they are not drugs, tonics or condiments; they are simply vital factors of foodstuffs which must be present in a sufficient quantity if best results are to be obtained. Furthermore, the results thus obtained by the use of supplementary sources of vitamins, particularly Vitamin B, indicate that we may be on the threshold of an era of great advancement along the lines of poultry development.

The writer, being particularly interested in this subject, would be very glad to correspond with poultry raisers who have had experience in vitamin feeding or who may desire any further information about the subject.

Vaccination of Poultry and What It Has Proved

By A. KELLAR GOODWIN

U. S. Veterans' Bureau, Vocational School, Chillicothe, Ohio

"VACCINATION is an outgrowth of man's effort to protect himself from pestilence by using nature's methods of defense," says Dr. G. W. McCoy, director of the Hygiene Laboratory of the U. S. Public Health Service. Primitive man noticed that recovery from a first attack of most diseases gave immunity against other attacks; and some 2,000 years ago he began to vaccinate his fellows with smallpox when conditions seemed propitious, instead of waiting for nature to do it at some time when conditions might be very unpropitious. Vaccination against smallpox was made in India and China

as early as 300 B. C. Later, when the disease reached Europe, vaccination went with it, and so it passed from nation to nation, being accepted by each generation, which in turn made improvements and applied the same to other animal life than men, until today it is conceded to be the greatest weapon of defense with which to guard all animal life.

It is an interesting fact that the fundamental work of Pasteur upon protective vaccination in fowl cholera, about 1880-82, was the first attempt to produce by use of artificial cultures immunity against a communicable disease, and was the basis for all later work in this field, the valuable results of which, at the present day, we see in the protective vaccination of so many diseases of animal life.

From time to time I have been questioned by poultrymen from Ohio and Kentucky as to the advisability of the vaccination of poultry against roup, canker, sore-head, chicken pox and fowl diphtheria. I have noticed at different times advertisements appearing in the various trade publications, making very broad assertions as to the advantages of vaccination. Not being in a position to make a positive statement regarding its prophylactic resistance, and the probable influence that it might have on future egg yield, the effect upon the fowls at the time of vaccination, and the number of deaths which might occur as a direct result from the administration of the bacterin, I decided to run a series of experiments to determine this for myself.

I used Avian Mixed Bacterin, which is composed of several killed cultures of different diseases, suspended in a normal salt solution. It is administered subcutaneously at intervals of three days, using $\frac{1}{2}$ cc, or approximately 8 drops, as a normal dose.

We used, in this experiment, yearling Single Comb Brown Leghorns, Anconas that were three years of age, and growing stock consisting of Jersey Black Giants hatched during the month of May, 1922. By this selection it was possible to ascertain the effect on both light and heavy breeds at different ages.

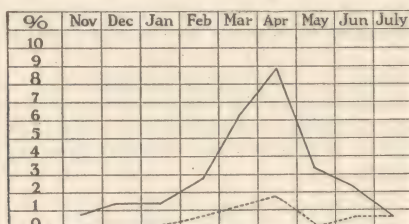
The experiment started in November, 1922, and the Single Comb Brown Leghorns were divided into two groups and selected at the time, using constitutional vigor as a guide. Particular pains were taken to see that each group was fairly divided from a laying standpoint. The two groups of Leghorns were placed in an Ohio type house, 20x40 feet, the vaccinated group occupying one half of the house and the controls the other half, separated by poultry netting. This placed them under like conditions. Each group was allowed the privilege of a runway 50x200 feet and was given just ordinary care. Their feed consisted of the regular Cornell ration. The Jersey Giants were treated likewise.

In the case of the Anconas, they were divided into two groups and no particular attention was paid to their selection. We vaccinated them just as they were removed from the catching coop. After vaccination, Mr. Norbert G. Ottke, Mr. George W. Johnson and myself compared the two groups and each of us agreed that the control birds had considerable advantage when judged by comparison without handling the birds, and especially was this true when we reviewed their past egg records.

The birds were all vaccinated by students of this school who had no previous experience in vaccination, 35 different students taking part in the work. To Mr. Norbert G. Ottke and Mr. George W. Johnson, I wish to acknowledge my indebtedness for the following accurate records kept by them throughout the experiment.

Sick Rate

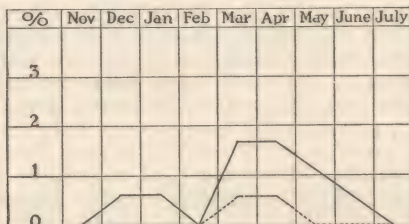
(Roup and Allied Diseases—Total for 9 Months)



Nonvaccinated flock.....	26 6-9%
Vaccinated flock.....	4 4-9%
Saving by vaccination.....	22 2-9%

Death Rate

(Roup and Allied Diseases—Total for 9 Months)



Nonvaccinated flock.....	6 1-9%
Vaccinated flock.....	1 1-9%
Saving by vaccination.....	5%

Conclusions

1. Avian Mixed Bacterin is non-poisonous.
2. No deaths resulted from vaccination.
3. Vaccination does not affect egg-yield.
4. Vaccination in no way, in so far as we could ascertain, affected fertility.
5. It absolutely does not affect the table quality of the fowl.
6. It seems that the percentage of hatch was about evenly divided between the controls and the vaccinated birds.
7. I do not believe it possible to introduce disease in the flock by its use.
8. I believe it advisable to gauge the dose according to the weight of the fowl.
9. It will prevent the spread of colds among the flock, thereby warding off roup, diphtheria, canker, etc., which are the after-effects of colds.
10. I personally do not recommend the vaccination of poultry where conditions are known to be hopeless, and for which destruction is the only cure; fowl tuberculosis is one of these; although preventable it is

practically incurable. Tumors and abdominal dropsy are other diseases for which vaccination is not intended.

11. I highly recommend vaccination and am firmly convinced that thousands of fowls can be saved each year by resorting to its use.

12. It does not require a person skilled in this line of work to administer vaccine.

The underlying basis for further development in progressive methods of the treatment of diseased birds depends upon accurate interpretation of scientific investigations, and I personally make a plea for more research work in vaccine therapy that we may see the advantages of it when applied to poultry.

Capons

By GEO. BEUOY, Cedar Vale, Kans.

CAPONS, you know, have made rapid gains in public popularity in the last few years. They are now established in all the principal markets the same as eggs, turkeys and other poultry. When capons are reaching the market in sufficient quantities they are quoted along with other poultry products.

The season commencing January 1, 1924, found most all poultry and its products selling for the lowest price in many years. Eggs and all other poultry products except capons continued to sell at falling prices during the season when they should have been the highest.

About the cheapest capon market in North America is the one at Kansas City, due to the fact that it receives the bulk of the world's capon supply. The capons received at Kansas City are then shipped to other markets of North America. They must, of course, be bought at Kansas City at prices that will permit shipping to other consuming markets of capons, Kansas City being the only large market receiving more capons than local trade will handle. Capons started in at 26 cents per pound, live weight, to the producer early in January, 1924. The capon market has continued to advance until the present moment, May 12, 1924, and the quotation for live capons, today on the Kansas City market is 32 cents per pound, the price paid to the producer. These same capons will be sold at retail to the consumer at from 50 cents to 75 cents per pound. The point is obvious; it would be much more profitable to the capon grower to sell direct to the consumer wherever possible. I may add that this is being done in a great many instances.

I have watched the capon market carefully for the past fifteen or twenty years, selling a great many capons of my own production each season. Prices have varied from high to low, but capons have always been the most profitable part of the poultry business as a strictly market proposition.

The present season has developed a speculators' market, which will have a decidedly favorable effect upon next spring's capon market; it cannot be otherwise. To explain more fully, eggs were being put in storage during February, March, and April throughout America at prices ranging from 15 cents to 20 cents per dozen—a losing proposition to the producer of eggs. The result is that poultry raisers have sold their laying stock in tremendous numbers. They have set only fifty per cent of the usual number of eggs. The season has not been favorable. The speculators are still handling the market and will continue to do so until they have their storage rooms entirely full. It has already happened

with eggs and it is safe to predict that the same thing will happen with live poultry, especially with the young stock that will be marketed within the next few months.

Once the available surplus supply of eggs and poultry is safely within the trader's grasp, then it will be to his interest to boost the price of both eggs and poultry which he will undoubtedly do shortly before the holiday trade opens. This means that the wide-awake poultryman who does not sacrifice his young cockerels but makes capons of them will be in a position to cash in at a handsome profit along with the speculator, next February, March, and April.

Half the young chicks raised this season, or nearly half, will be male birds. If they are sacrificed on the speculators' old market during July, August, and September, they will lose money to the producer. By making capons of them and holding on until February or March, these same birds will make a profitable growth all the time. Instead of selling for 25 cents or 30 cents each, they will bring from \$2.00 to \$3.00 each if sold as capons.

Newly designed caponizing instruments made of compressed aluminum have simplified the operation so that a child can do the work without previous experience just as well as anyone. Illustrated directions accompany these tools. By commencing on a dead bird, one that has just been killed to eat, a person learns to handle the instruments until he removes the necessary glands with confidence and success. In making capons by the approved modern method, there is scarcely any danger of loss by death of the bird. It requires only a minute or two to make a capon of a young rooster. The operation means a handsome profit. No one can expect his poultry to make the maximum profit unless capons are made each year.



Feeds for Young Chicks

A Set of Condensed Rules for Raising the Chick from Babyhood to Maturity

By ARTHUR C. SMITH, University of Minnesota, St. Paul, Minn.

Give sharp, dry sand as soon as hatched. Feed the healthy ones 36 hours after hatching, weaker ones 12 hours later.

FIRST PERIOD

For two or three days, feed may be one or a combination of the following rations, one only at a meal: (1) Eggs boiled hard, or mixed with crumbs of stale bread; (2) Stale bread crumbs and sweet milk; (3) Pin-head or steelcut oatmeal, dry; (4) Finely cracked wheat, dry; (5) Finely cracked, well-seasoned corn, dry; (6) A good commercial chick feed, dry. Feed lightly and often, and keep the chicks active. Feed chick feed or finely cracked grains in a fine, dry, light litter, until two weeks old. If stale bread, cracker crumbs, milk (sweet or sour) are handy, feed for variety. Feed grains after three or four days, if not on range. Out of season, or if confined, use cabbage, lettuce, mangels, lawn clippings, apples, or clipped ends only of sprouted grains.

SECOND PERIOD—Two to Six Weeks of Age

GRAINS AND SEEDS—Feed whole wheat and cracked corn if wholesome. Only the sweetest and soundest grains are fit for the young stock. Any moldy, bin-burnt, or tainted feeds will result in big losses.

DRY MASHES—These should be provided and are essential to the

best conditions of health and most rapid growth. They may consist of corn meal, bran, middlings, sifted or finely ground oats, five per cent by weight of sweet, clean beef scraps, ten to fifteen per cent of bone meal for lighter breeds, but five to ten per cent for the larger breeds. Supply clean water and milk at all times.

THIRD PERIOD—Eight Weeks to Maturity

ON FREE RANGE—Both grains and dry mash should be fed in hoppers. **GRAIN:** Cracked corn, wheat, or both mixed. **MASH:** Bran, wheat, middlings, corn meal, ground oats, equal parts by weight. A half pound of salt to 100 pounds of mash; five per cent by weight of bone meal; five per cent by weight of good beef scraps. Milk in any form is a good substitute for beef scraps. If rapid growth is desired, feed beef scraps in a separate hopper or box. A constant supply of both milk and dry beef scraps tends to rapid growth.

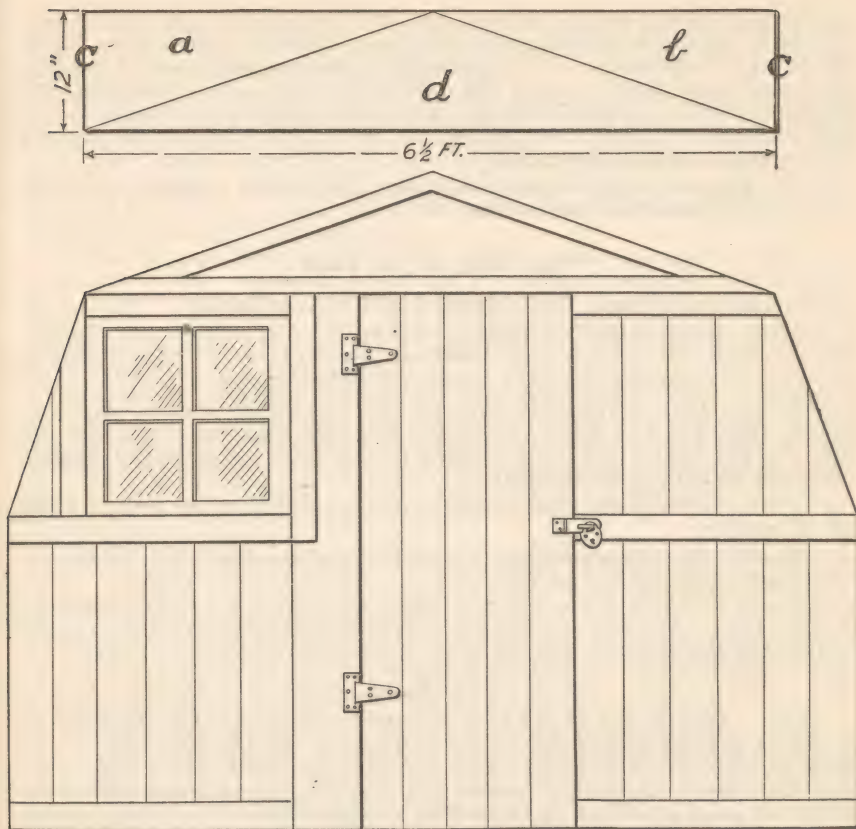
CONFINED QUARTERS—They increase the amount of work required to raise chicks. If attempted, the care differs from that of range chicks, in that green and animal foods must be provided, and also exercise. If too closely confined, it is almost impossible to grow chicks at a profit, even with the most constant and faithful care.



A Practical Low-Priced Colony House Built From Two Piano Boxes

A very serviceable colony house may be built from the lumber contained in two piano boxes, the only extra lumber required being a twelve-inch board about six and one-half feet long, which is used for the gables. The accompanying illustration shows the front view of this house.

Knock out the back, bottom and top of each box. Place the boxes with their backs toward each other, the same distance apart as the width of the bottom. Take one of the bottoms, saw it off so that it will be the same length as the height of the box, and fasten this in the opening between the boxes on that side which is to be the back of the house. The bottom of the other box may be used to close the space at the front of the house, part of which will form the door. Next saw the 12-inch board as shown in the upper part of the illustration. Use the part "d" to form the gable at the front, nailing cleats around it to strengthen it. Unite the parts "a" and "b" in such a manner that the ends "c" and "c" come together to form the gable at the back. Nail cleats around this in the same way as you did on the piece which forms the front gable. Use the tops and enough of the backs of the boxes to close up the roof. A window may be placed in the front part, as shown in the picture, hinged so as to swing inward, and with the outside frame covered with wire netting. A better plan would be to use a frame covered with muslin in place of this window, and have a window on the east side of the house. This window will be low down, but that does not matter. There will be enough lumber left for dropping boards and roosts. The roof should be covered with a good quality of roofing, and the sides may either be painted or covered with roofing. We would like to call attention to the fact that the "Asbestos" brand of roofing is the best roofing for covering poultry houses. All other roofings have the fault that they draw the heat when the sun strikes them, and thus make the building covered with them almost intolerably hot when the sun shines on them in summer. Asbestos



roofing is white in color, and therefore it does not absorb the sun's rays, and besides being a good insulator, it makes the buildings warm in winter and cool in summer. In the hot summer the fowls seek the inside of a building covered with asbestos roofing, in preference to shade under trees.



Principles of Poultry Feeding

By M. E. DICKSON

A good ration can do but three things: First, it is used to build up and replace the worn-down tissues of the hen's body; second, it is used to furnish the body with heat and energy; and third, it is used for the manufacturing of eggs.

No ration can make a hen lay that is naturally unfit or poorly developed for laying. Immature or sickly birds cannot be made to produce eggs by simply giving them an egg-producing ration. First of all, the body and health of the fowl must be in the proper condition. Then, with proper food and good care, best results will be obtained; but good care

and proper feeding will not make a naturally poor layer a high producer. This is a question of breeding and not one of feeding. These three things are of equal importance in the production of eggs—the ration of the hen, the breeding of the hen, and the care of the hen. Two boys may get entirely different results from the same flock and with the same ration. It is a question of their care and skill in feeding the birds and in keeping them comfortable and contented.

The purpose of this article is to take up only the principles of feeding, to tell why certain methods are used.

The Value of the Food

In choosing a food, four things should be considered:

First, the digestibility; that is, how much of it may be used to suit the purposes for which it is intended, or how much of it will actually be of value in supplying the body needs and building eggs.

Second, the composition; that is, the amount of protein, carbohydrates, fats, ash and water, which are the real food materials that are used by the body. Of these protein is the most valuable and protein feeds are usually more expensive.

Third, the palatability, whether or not the bird likes the feed and will eat it readily.

Fourth, the wholesomeness or cleanliness of the food. Moldy, musty, or dirty food should not be fed.

Hence, good food for the hen is easily digested, contains protein, carbohydrates, fat, ash, and some water; is palatable or has a good taste, so that the hen likes it; is clean, fresh, and sweet smelling.

Grain Foods

Corn—Corn is one of the best poultry feeds. It is easily digested. It is rich in protein and carbohydrates and is well liked by the hen. If fed with no other grain, it is fattening and is a poor feed for making eggs. However, any grain when fed alone is a poor food for this purpose. Corn is not so good as wheat for supplying the food materials in the proper proportions for making eggs.

Wheat—Wheat is not fed so generally as corn, but it is better food for producing eggs. It is not so fattening, is easily digested, and is well liked by the hen. The by-products, such as bran and middlings, are used in the dry mash.

Oats—The hen will eat oats, but prefers corn and wheat. The food value of this grain is high, but the hen does not like it. This is due chiefly to the hull on the outside, which is indigestible and is a kind of roughage. The chicken does not like any food which she cannot digest readily.

Barley—Barley is very seldom used as a feed for chickens. They do not like it and will eat it only when forced to do so. It is pretty expensive poultry feed.

Peas—Where peas can be grown successfully, they should be used as a poultry food. They contain about twice as much protein as corn, and are therefore worth more for increasing the protein in a ration.

Animal Foods

Animal food in the form of skim milk, meat scrap, cut bone, fresh lean meat, bugs, etc., is just as necessary in the ration of the hen as

grain. The hen likes meat, and she puts a fourth of an ounce into each egg. Therefore, if we are to expect the hen to lay one egg a day we must give her some form of animal food.

Skim Milk—Skim milk contains the animal protein that is needed for the egg, but it contains too much water. Ten pounds of skim milk contains 9 pounds of water and only 1 pound of protein. In order to get sufficient protein the hen must drink a great deal of milk. This she will do to some extent, and if she will drink enough skim milk it will produce as good results as meat scraps. If milk is fed in clabbered form, the fowls will get more food out of it.

Meat Scrap—Meat scrap is the most convenient form in which to feed animal food. It contains very little water and varies in protein from 40 to 60 per cent; that is to say, 100 pounds of this feed contains from 40 to 60 pounds of meat feed. It is sold in bags, and stores very nicely without spoiling. It is easily digestible and very well liked by both chicks and hens.

Cut Bone—Cut bone is a valuable feed because of the ash it contains. It is also rich in protein and fat. It may be bought either dry or freshly cut. Freshly cut bone is better. Since this food is so rich in protein, only a very little should be fed each day. One ounce to the bird is sufficient. Dried bone makes an excellent addition to the ration for little chicks, as it furnishes ash for the building of bone and protein for the building of muscle.

Fresh Lean Meat—Meat scraps from the butcher shop or from the house are very good as a feed for producing eggs. The hen likes meat in almost any form. When fed fresh it is very desirable, but when stale is very dangerous and often poisons the hen that eats it.

Bugs—The reason why many hens on the farm do not lay in the winter is because they do not get any kind of meat. In the summer they gather bugs and worms and in this way get the animal protein they need, and are able to lay as they do.

Green Feed—The best green feed for the hen is the one she likes best. Fresh cut alfalfa is very good and well liked; but when put away and cured it loses its water and is more or less dried. The hen likes a more succulent or watery green feed, such as cabbage, mangel-wurzel, or freshly sprouted oats. There is no danger from overfeeding green feed and any kind the hen will eat is good for her. Variety in this kind of feed, however, is readily appreciated by the layer.

Feeds and Rations for the Hen

By M. E. DICKSON

There is no one best ration for the hen. Any ration that satisfies the needs of her body and furnishes the proper food material for manufacturing eggs is all that is necessary.

The grains used should be those grown in your community, of good quality and reasonably cheap. Any of those mentioned below are good poultry feeds. The hen likes them all, but owing to a little difference in taste and composition she prefers some to others. She also likes a wide variety so she can suit herself—about the same as you like to help yourself to the different kinds of food on the table.

Selecting the Feed for the Hen

To build an egg, the hen must take from her feed five different kinds

of food materials. These are known as carbohydrates, protein, fat, ash and water. They represent, or rather, are names for certain kinds of food found in the grain. All grains contain these five materials, but in varying amounts, as will be seen from the following table. The egg contains the same materials except carbohydrates. By a comparison, then, of these materials it is plain that no one grain contains all of the food necessary for making the egg. If a selection is made of different grains, the food materials can be so regulated as to suit the purpose of the hen. The combination that is finally decided upon should then satisfy the needs of the hen's body in building up her strength and tissues, and in addition to this still leave enough food material for the building of eggs. This is the ideal ration and may be obtained in many different ways, depending upon the selection of the grains and other feeds used.

What the Egg Contains

	Water	Ash	Protein	Carbo- hydrates	Fat
Fresh egg	65.7	12.2	11.4		8.9

What the Feed Contains

Grains	Water	Ash	Protein	Carbo- hydrates	Fat
Corn	10.9	1.5	10.5	71.7	5.4
Wheat	10.5	1.8	11.9	73.7	2.1
Oats	11.0	3.0	11.8	69.2	5.0
Barley	10.9	2.4	12.4	72.5	1.8
Peas	10.5	2.6	20.2	65.5	1.8
Wheat bran	11.6	5.18	14.5	65.5	3.6
Wheat middlings	11.8	2.8	15.2	65.7	4.5
Kafir corn	9.3	1.5	9.9	74.9	3.0

Green Feed

Alfalfa	71.8	2.7	4.8	19.7	1.0
Clover, red	80.9	1.7	3.1	19.7	.7
Mangel-wurzel	91.2	1.0	2.4	1.2	.2
Cabbage	90.5	1.4	2.4	5.4	.4

Animal Food

Skim milk	90.6	.7	3.3	5.3	.1
Buttermilk	90.3	.7	4.0	4.5	.5
Meat Scrap	10.7	4.1	66.2	.3	13.7
Cut Bone	32.8	33.0	28.4	2.5	36.6

Best results are obtained when part of the feed consists of ground grain or mash. Poultry feeds are divided into four groups. Grains, green feed, animal food, and mineral food. All of these are necessary for a complete ration.

The Ration

Milk to drink—green feed—oyster shell—grit	
Scratch Feed	Laying Mash
2 lbs. cracked corn	2 lbs. cornmeal
2 lbs. Kafir corn	2 lbs. bran
2 lbs. wheat	2 lbs. middlings (wheat)
2 lbs. oats	2 lbs. ground oats
1 lb. barley	2 lbs. meat scrap

The fowls should eat at least one-half as much mash by weight as grain. Feed sparingly of grain in the morning and heavily at night. Use

only strictly sweet grains, free from mustiness or mold. When the birds are confined, feed grain in a deep litter of dry straw morning and night. When possible, allow the flock free range. Provide dry mash in a hopper for free access that the hen may eat it whenever she cares to. To force production, feed, in addition to the above grain and dry mash feedings, one feed per day of the above mash moistened with milk. Beets, cabbage, sprouted oats, green alfalfa, and clover are succulent green feeds and are necessary to the grain and mash ration.



Fattening Poultry for Market

By PROF. F. N. MARCELLUS

The selling of lean chickens is wasteful, to say the least. Much more interest is being taken in this branch of the industry year by year and in districts where buyers discriminate in prices between the well-finished and thin chickens the progress has been very pleasing. In many cases where the farmers will not fatten their poultry before selling the dealers have erected large buildings in which to fatten stock. They know that the farmer or grower can do this work better and more cheaply, but if he will persist in sending lean chickens to market, and the consuming public demands fat chickens, someone must supply the demand. Surely, if the dealer can buy all the raw materials from the farmer or grower, and make a profit, the producer could do as well or better.

There is ordinarily from three to seven cents per pound difference in the price paid for well fleshed or fattened chickens and that paid for birds just off the range or fields.

It must be understood, of course, that all birds will not make economical gains. Like other lines of live stock, the scrub is not desirable. Good, thrifty cockerels, either purebred or crosses of such breeds as Rocks, Wyandottes, Rhode Island Reds, Orpingtons, Dorkings, Games, etc., are the most desirable. Leghorns, Minorcas or birds of similar character are not profitable to attempt to fatten.

In the fattening of poultry for market two different systems are in general use, i. e., pen or stall feeding and crate feeding. The former has proven very satisfactory for fleshing and finishing turkeys, ducks and geese. The latter after repeated trials has proven better for fleshing and finishing chickens. In the pen or stall feeding, the birds should have from three to five square feet of floor space depending on the size of the individual and the pen should be kept darkened during the day except at feeding time. For crate feeding a standard-sized crate is now in general use.

Crates for Crate Feeding

Fattening crates are made 7 ft. 6 in. long, 18 in. wide and 18 to 20 in. high. The crate is divided into three compartments, each holding from four to five birds according to the size of the chickens. The crate is of slats, except the ends and partitions between the compartments which are solid wood, the slats on the top, bottom and back running lengthwise of the coop while those of the front run up and down. The slats are usually $1\frac{1}{2}$ in. wide and $\frac{3}{4}$ in. thick. Those in the bottom are placed $\frac{3}{4}$ in. apart so as to admit of the droppings passing through to the ground. An opening between the first bottom slat and the back prevents the droppings from collecting and decomposing. The slats on the top and back are usually two inches apart.

There is a small V-shaped trough arranged in front of the coop for feeding and watering the chickens. This trough is from two to three inches deep and is made of $\frac{3}{4}$ in. lumber or galvanized iron.

Birds going into the crates should be thoroughly dusted with Persian Insect Powder (Pyrethrum) to rid them of lice. They should be watered twice a day during the warm weather and should have grit supplied twice a week.

During the first week feed lightly—never quite all the birds will eat. The birds may be fed twice or three times a day as the feeder desires. It is usually found more satisfactory to feed three times per day the first week and twice per day thereafter. Feeding should not extend over a period of more than four weeks. The greatest gains are made during the second week. Chickens that are thrifty, of good breeding and weigh from three to four pounds make the most profitable gains.

Should birds become sick while in the crates, they will usually recover if given a teaspoonful of Epsom Salts and turned out on the grass.

It is difficult to give a ration suitable for fattening chickens and that meets the requirements of every individual. Many of us have to use whatever foods are available and for that reason several rations will be given. The grains in the ration should be ground as finely as possible. It is desirable that the food should be mixed to the consistency of a pancake batter, so it will pour, and further, it has been found that the best results are procured when the food is mixed twelve hours previous to feeding.

A ration which might be used as a standard is one composed of five parts finely ground corn, two parts finely ground oats and two parts wheat middlings. Other materials might be substituted for these; for example, finely ground barley could take the place of the oats or the wheat middlings could be replaced by ground buckwheat. It is desirable, if possible, to always use milk (skim or buttermilk) for mixing with meals, as much better gains are made with it than with any other material which can be used. For mixing about two to one pounds of grain are used. Where milk is not available, meat meal or beef scrap can be substituted, but should not be used in quantities greater than 15 per cent of the grain ration. In many cases the meat foods should be soaked for twelve hours before mixing with the grain.

It is of the utmost importance that birds be kept with keen appetite as a little over-feeding the first week usually means poor gains. The feeder should therefore aim to always feed just a little less than meets the full demand of the birds. A small amount of ground charcoal and a very small amount of salt added to the ration will tend to improve its feeding value.

The birds before being killed should be starved for twenty-four hours and liberally supplied with fresh, pure water to drink. This insures perfect cleaning of the digestive tract of all food material which, if allowed to remain in the alimentary canal after killing would readily decompose, causing putrefaction of the flesh of the bird. Killing by bleeding through the mouth is most desirable. For full information on this matter the reader is referred to Circular No. 61 of the Bureau of Chemistry, Dept. of Agriculture, Washington, D. C., which will be sent free upon request.

Common Poultry Parasites

By LEW T. SKINNER

The Red Mite

Every poultry keeper must fight mites. They are carried by sparrows and in various other ways that can not be controlled.

Mites thrive in unclean houses—in the nests, on the floors, and in cracks and crevices about the roosts.

Mites are first noticed in early summer, hiding under and about the perches. When allowed to live and multiply they spread to all parts of the house.

They attack the bird at night and live by sapping its blood. They often kill little chicks. They reduce egg production.

Be on your guard. When you first notice the mites, clean the house thoroughly and spray the nests, dropping-boards, walls, and perches with kerosene. It is a good plan to white-wash the entire house.

Lice

Body Lice—Lice live and reproduce on poultry the year around. They multiply rapidly—four generations in eight weeks. A total of 125,000 may be produced in that time from but one pair. The eggs are attached to the fluff below the vent, and, in bad cases, under the wings.

The louse breathes through the pores of the skin. Dust, such as common dust or ashes, will kill them by suffocation. Commercial insect powders are good. Pyrethrum is cheap and may be procured at any drug store. Powders of all kinds kill only those lice which are alive. When the eggs hatch, the fowls are again infested.

To rid the bird entirely of lice it is necessary to kill every louse as it hatches. Blue ointment serves this purpose nicely. It is a poisonous, grease-like substance and may be procured at any drug store. Apply a small amount, such as a thimbleful, to each bird just below the vent. One treatment in the spring and another in the fall is sufficient.

Head Lice—Do not use blue ointment for head lice on chicks. Use common vaseline or lard. Never use a lousy hen for rearing chicks. Always dust the hen and grease the heads of the chicks when first placed in coops.

Worms

Worms are commonly found in all poultry, large and small. In small numbers, they do little harm; in large numbers they may be fatal.

The infested animals show signs of indigestion accompanied by a watery condition of the bowels. The bird gets thin, although the appetite may not change from normal.

Intestinal Worms—Intestinal worms from infested poultry may be plainly seen in the droppings. For treatment, prevent the spread by removing all droppings out of reach of the birds. Spray with a disinfectant.

Lime the infested yards and plow. Place the poultry on fresh ground. For individual treatment, give each bird one teaspoonful of turpentine and one tablespoonful of Epsom salts. For 100 birds, dissolve 5 pounds of Epsom salt in warm water and mix in a wet mash.

Gape Worms—Gape worms are commonly found in poultry raised on low ground. They may be seen attached to the walls of the windpipe. For treatment, restrict the birds to well-drained quarters and plow the

infested areas. Individual treatment necessitates the removal of the worms. Swab out the windpipe with a feather moistened with turpentine.

Toe-Marking Chicks

When it is desired to pedigree chicks or simply to keep a record of the pen that produced certain chicks, it is customary to toe-mark the chicks. By means of these toe marks, chicks can be identified throughout their entire life.

Toe-marking chicks is a simple operation and consists of punching or cutting a hole in the web between the chick's toe. An instrument designed for the purpose may be secured of the RHODE ISLAND RED JOURNAL, Waverly, Iowa, for 25c. It is possible to effect a series of sixteen combinations of markings by use of the toe punch. These marks are shown in the accompanying illustration. Some breeders use a sharp knife and simply cut a small slit in the web, and by using these slits fifteen additional identification marks may be used — or even more, by using a combination of punch holes and slits.

The operation should be performed when removing the chicks from the incubator or nest. When done at a later date much trouble may be experienced, as the blood is apt to appear in the cut in older chicks, which soon attracts attention of their mates, and the little fellows are soon literally eating one another up. The marks are also very liable to heal over in the older chicks, thus making identification impossible.



Preliminary Treatment of Sick Fowls

There are many ways of treating or "doctoring" sick fowls, and almost every poultry raiser has a method of his own. To recommend any one way as being the only way is, of course, absurd. One person may have results in using some pet scheme of treatment which in the hands of another operator would fail miserably. We recommend the following treatment as one that may give universal satisfaction:

Just as soon as the fowl is noticed to be out of condition examine carefully for lice. If found to be infested, grease thoroughly. Then give approximately a teaspoonful of a mixture of powdered rhubarb and soda: Powdered rhubarb, 2 parts; bicarbonate soda, 1 part; mix thoroughly.

This may be easily administered in pill form—two gelatin capsules, size 00 for mature stock. It is the opinion of the writer that powdered rhubarb and soda are more efficient than Epsom salts in that Epsom salts are too drastic in their action for sick birds. Epsom salts are generally recommended for healthy fowls and may be given once a month in the mash.

After administering the capsules of rhubarb and soda, another capsule is given containing powdered charcoal and oil of American wormseed or Jerusalem oak, mixed as follows: Powdered charcoal, $\frac{1}{4}$ teaspoonful; Wormseed oil, 3 or 4 drops; be careful to administer the right amount.

This preliminary treatment is given to sick birds, regardless of the character of the ailment. If a bird is very weak and run down, no further treatment is given until the following day or until such time as the bird has partially recuperated. To start right in "rough shod" to cure the bird would be fatal. Allow the fowl sufficient time to "catch its breath," so to speak, and then by feeding soft mash to which has been added some cooked eggs, prepare the fowl for treatment.

Oftentimes a weak bird is mistreated by other members of the flock, and if removed in time and placed in a quiet place with plenty of good food and water, in many cases no other form of treatment will be necessary.



Line Breeding

Line breeding is judicious inbreeding. To make a start with a variety of Standard fowls, take a pair, a trio or a pen, the male not kin to the females. All must be of proper size, sound constitution and vigorous. The male should be in type as near Standard description as possible; the female or females, akin or as near alike as can be had by selection, if not akin.

Trap nest your hen or hens, and keep record of their laying. If breeding from a trio, set the eggs from each hen separately, punch-mark their chicks, and register the marks. At maturity of both males and females, select the females that show the strongest feature of their size (supposing you are breeding Reds) such as length of body, good head point, and such as approach in general color his breast plumage. Mate those back to their sire; again punch-mark their progeny and register these marks.

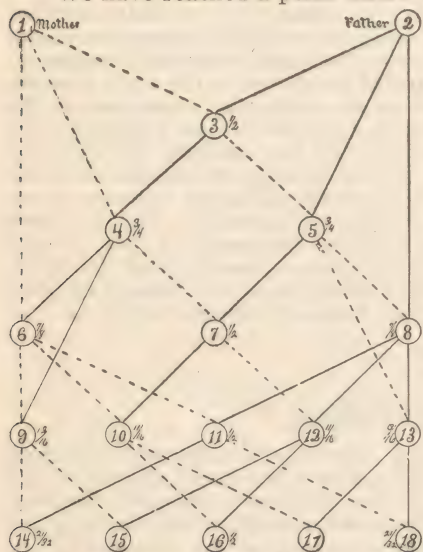
You now have groups, female No. 1, male No. 2; group No. 3, which is half the blood of sire and dam. Females from group No. 3, mated back to their sire, No. 2, have produced group No. 5, which is three-fourths of the blood of the sire, No. 2, and one-fourth of the blood of the dam, No. 1. A male from group No. 3 mated back to his dam, No. 1, produced group No. 4, which is three-fourths of the blood of the dam, No. 1, and one-fourth of the blood of the sire, No. 2.

Again select a cockerel from group No. 5 and a pullet from group No. 4, or vice versa, which will produce group No. 7, which is mathematically half the blood of each of the original pair, No. 1 and 2. This is a second step toward producing a new strain. Females from No. 5 mated back to the original male, No. 2, produce group No. 8, that are seven-eighths the blood of No. 2, and a cockerel No. 4 mated back to the

original dam, No. 1, produced group No. 6, that is seven-eighths the blood of the original dam and only one-eighth the blood of the original sire.

Again we select a male from No. 8 and females from No. 6, and for a third time produce chicks (group No. 11) that are half the blood of the original pair. This is the third step and the ninth mating in securing a complete breeding of our new strain. In all this we have not broken the line of sires, for every one has come from a group in which the preponderance of blood was that of the original sire. Nos. 2, 8, 13 and 18 are virtually the blood of No. 2.

We have reached a point where we would establish a male line whose



No. 2, we have three distinct strains and by and with this systematic use we can go on breeding for all time to come. (See Breeding Chart.)

In mating to secure a certain proportion of male blood in the chicks, we should at the same time make allowance for the same proportion of female blood. Thus, 5 mated to 8 gives three-sixteenths of the male breeding, and 4 mated to 6 gives thirteen-sixteenths of the original strain, while the progeny of these matings, 9 and 13, if they were mated for subsequent use, becomes one-half the blood of each of the original pair. The thing ever to keep in mind is that this middle mating, or all, 3, 7, 11, 16, are the reservoirs of blood from which each of your two families is being fed, and whose influence is so strong for good that you will be enabled, so long as you are thus careful to live within your own yards, to produce unlimited numbers, and preserve the same likeness, vigor, and productiveness you started with. Then how important it is that we, in our first selection, make sure that the female is a phenomenal producer, as to number, size, and shape of eggs; that she is of good size, and as near Standard shape and color as possible. Barring accidents, such should be our selection.

The male, to a greater degree, controls the shape and color, while constitution, size and productiveness are the special functions of the dam. Yet I would hesitate to mate a first-class female with a male I know

nothing about. He should come from a first-class producing female.—Quotations from I. K. Felsch's Poultry Book.

A Simple Home-Made Trap Nest

This illustration shows a simple trap nest that can easily be made by anyone handy with tools. It can be made out of any ordinary box with the proper dimensions. The complete nest should be about 18 inches long and the front about one foot square. A strip about two inches wide should be fastened on the floor of the nest, about twelve inches from the back, making a nest in the back of the box about twelve inches square. The trigger, which is made of one-inch material, is fastened to the side of the nest box. When the trap is set, the door rests on this trigger. As

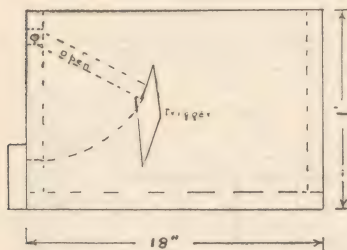


Fig. 19. THE TRIGGER IN POSITION
The dotted lines show the open door. When raised by the hen entering the trigger is released allowing door to fall shut.

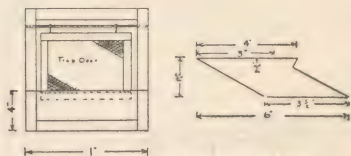


Fig. 18. FRONT OF NEST AND TRIGGER
The door should be constructed of light material so as to operate easily. One-inch material should be used in making the trigger.

the hen enters, she raises the door slightly with her back, thus releasing the trigger, which drops down, permitting the door to close as the hen continues to enter the nest. This nest is one of the simplest and most satisfactory trap nests that can be made at home.

A "Common Sense" Window for Fresh Air Poultry House

Designed by CHAS. A. HOLMES, Detroit, Mich.

A few years ago it was quite general among our farmers and poultry raisers to plaster the walls of their coops and furnish artificial heat to induce their chickens to produce more in the winter months, but in recent years we have learned through experience that plenty of fresh air at all times is one of the most essential factors in successful poultry raising.

Our agricultural colleges are teaching the raising of poultry successfully with the use of fresh air poultry houses, the government is advocating in its bulletins the use of fresh air poultry houses, and uses them extensively at experimental stations, and the most successful poultry raisers in the country are using the fresh air type of houses.

Vigor and hardiness combined with proper feeding are what have brought the productiveness of our fowl to the maximum today, and without plenty of dry-fresh air we have neither the vigor nor the hardiness,

the coop. Make a saw cut the full length of the bottom rail of the muslin frame to receive the edge of drip and tack or nail the face of drip to frame, as shown in detail. Be sure to locate drip so it will not interfere with sash and frame when opening.

Should the size of this window be increased considerably, I would suggest making the sash and frame of heavier material to eliminate warping, and place a fastener in center to hold sash and frame together when closed. I would also use four hinges instead of three as shown. The entire opening is to be covered on the outside with wire netting tacked to the window frame.

The accompanying drawing illustrates a type of coop commonly known as the colony house, but as this design is particularly adaptable to back yard poultry keeping, we will describe it briefly along this line, for the benefit of those who are limited to the use of a city lot where a larger building would be prohibitive. It will be noted that this building is shown to be constructed portable by the use of hinges or loose butts and hooks. This construction is particularly good for those who wish to build one or more of these coops under shelter during the winter months, and place same at their selected location in the spring. The butts are to be screwed securely to cleats to hold the different sections tightly in place, and when ready to move or store away, the loose pins can be removed, leaving the butts in the proper location for quick erection. The entire coop is secured to the floor by the use of hooks and screw eyes, but should it be decided to locate the building permanently, the sections may be nailed together, which would, of course, eliminate the additional cost of hardware.

This coop being only eight feet square and supplied with plenty of glass to admit sunlight, it is especially adapted for limited space, where a scratching shed would cover too much ground. Although matched flooring would make a tight and draft-proof building, it is rather expensive construction, so I would suggest a cheaper grade of lumber and cover the entire exterior of the coop with water-proof building paper.

It will be noted that the dropping board does not extend the full width of the coop, allowing room to get at the back of the nests, but I believe I could improve on this by running the dropping board the full width of the coop and constructing nests to pull out on truck rollers or cleats. Another suggestion I would make, owing to the shallowness of this building, is this: Where the winters are severe I would provide a drop curtain in front of the roosts to eliminate as much as possible the freezing of the combs of the large-combed varieties.

Roosts are things that seem to be a matter of opinion among fanciers, but in my opinion it is natural for a chicken to stand flat-footed and not be obliged to cling to a round pole or narrow roosts. I find the use of two strips about three inches wide, one being nailed edgewise to the other for stiffness, forming a "T" shaped roost, to be very desirable and simple in construction.



How to Build a Backyard Poultry House

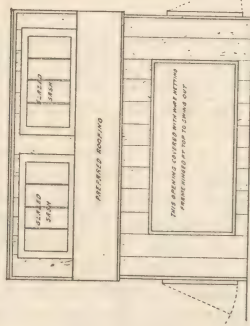
Poultry house construction is without a doubt the most important factor in poultry management. Without a suitable poultry house it is impossible to obtain the most profit from the poultry flock. Disease and vermin are hard to control. The vitality is apt to be lowered and even

BACK-YARD POULTRY HOUSE

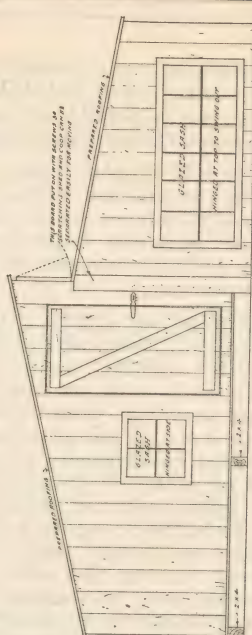
DESIGNED BY

CHAS. C. HOLMES

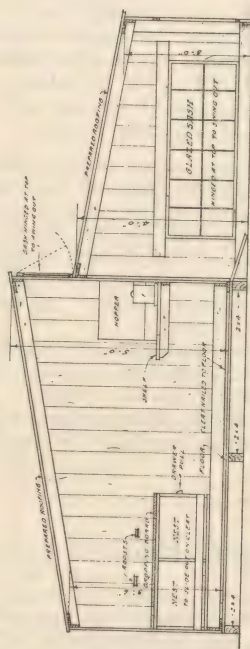
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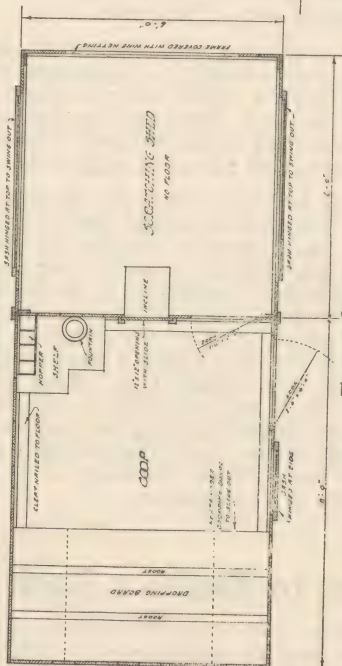
FRONT OR SOUTH ELEVATION



SIDE ELEVATION



LONGITUDINAL SECTION



FLOOR PLAN

with the most efficient ration good results cannot be hoped for. For these reasons, the first step after securing the right kind of stock is to provide suitable homes for the poultry flock.

On the opposite page is illustrated a type of house that is very practical and of the right size for the average family flock, as it will conveniently house from twenty to twenty-five birds.

Among the first things taken into consideration with this design, or these working drawings, are cheapness and simplicity in construction. It will be noted that the only two-by-fours required here are the three six-foot pieces on which the floor is laid, the walls and roof being nailed to cleats of the same thickness as the boards forming these different sections.

The longest boards shown are the roof and floor boards, which are eight feet, but should boards of this length not be available, they could be laid the narrow way of the coop, which, of course, would make them six feet long. However, if the latter is done, it will be necessary to lay the two-by-fours lengthwise of the coop, which would increase them two feet in length.

The longest boards required for the walls are five feet, running down to three feet in length, which will enable us to use such old lumber as may be lying around the yard, or using the boards from old shipping cases, etc.

Nests should be about 18 inches square, two on each side under dropping board. The bottoms of the nests are to slide on cleats to which the boards of the side wall are nailed, and the tops of nests to be guided with a cleat nailed to bottom of dropping board. This method you will find very convenient in gathering eggs, and they should be gathered several times a day in freezing weather.

As for the sash, it will be noted that no glass sizes are marked, as it is quite possible that second-hand sash may be purchased, which might vary a little from size shown.

Under certain conditions, I would suggest covering the entire outside of coop with water-proof building paper to eliminate any draft through the cracks, but this is a matter to be considered according to the climatic conditions.

The hopper and drinking fountain should be kept off the floor for the purpose of keeping them clean when the fowls scratch in the litter for their feed.

The scratching shed is to have no floor, as the fowls enjoy dusting themselves in the dirt, and this is an excellent remedy or preventative for lice and mites.

The building should be shifted enough several times a season to place the scratching shed over new soil, and the soil should be spaded under, as the droppings cause the ground to become sour, which is detrimental to your flock. The board which is shown to screw on is for the purpose of separating the building readily and moving it in two sections.

The walls and roof of this building may be put together with hooks and screw eyes, instead of being nailed together, but this is not necessary, unless you wish to have it portable.

Don't overlook using a disinfecting white paint such as Carbola or white-washing the entire interior of your building, as this is one of the most important things to be considered from a sanitary standpoint, as well as adding considerably to the light.

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